SHARP **SERVICE MANUAL**

No. 00ZUX510UASME

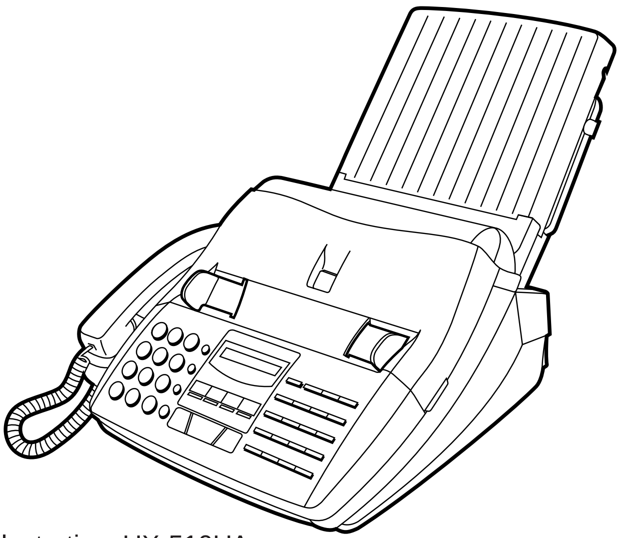


Illustration: UX-510UA

FACSIMILE

UX-510A
MODEL FO-1470

SELECTION CODE	DESTINATION
U	U.S.A.

CONTENTS

Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

CAUTION FOR BATTERY REPLACEMENT

(Danish) ADVARSEL !
Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandoren.

(English) Caution !
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type
recommended by the equipment manufacturer.
Discard used batteries according to manufacturer's
instructions.

(Finnish) VAROITUS
Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden
mukaisesti.

(French) ATTENTION
Il y a danger d'explosion s' il y a remplacement incorrect
de la batterie. Remplacer uniquement avec une batterie du
même type ou d'un type recommandé par le constructeur.
Mettre au rébut les batteries usagées conformément aux
instructions du fabricant.

(Swedish) VARNING
Explosionsfare vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens
instruktion.

(German) Achtung
Explosionsgefahr bei Verwendung inkorrekter Batterien.
Als Ersatzbatterien dürfen nur Batterien vom gleichen Typ oder
vom Hersteller empfohlene Batterien verwendet werden.
Entsorgung der gebrauchten Batterien nur nach den vom
Hersteller angegebenen Anweisungen.

CHAPTER 1. GENERAL DESCRIPTION

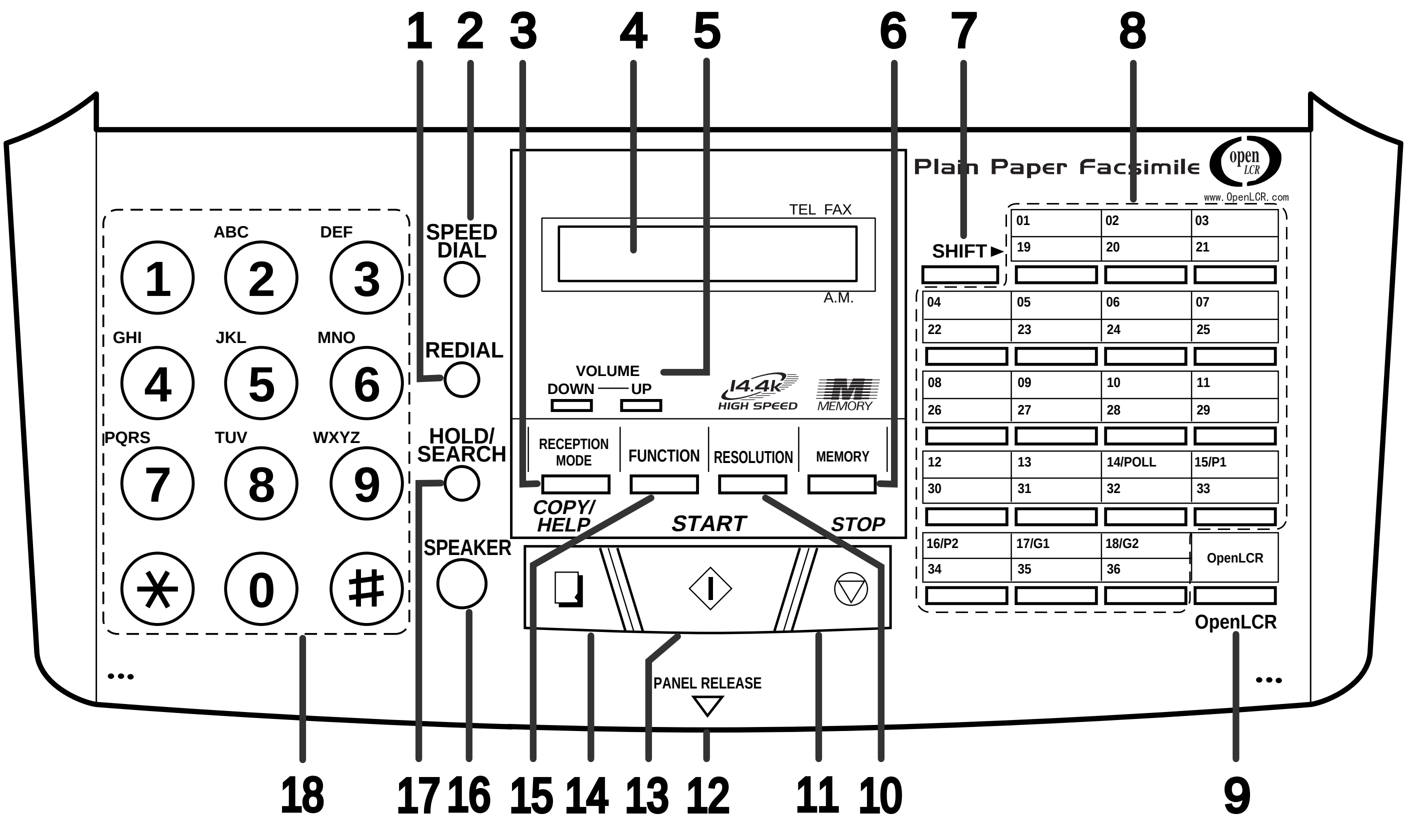
[1] Specifications

Automatic dialing:	Rapid Key Dialing: 36 numbers Speed Dialing: 63 numbers
Imaging film:	**Initial starter roll** (included with machine): Approx. 60 letter-size pages **Replacement roll:** **UX-15CR/FO-15CR** (One roll yields approx. 500 letter-size pages)
Memory size* :	512 KB (approx. 30 average pages with ECM turned off)
Modem speed:	14,400 bps with Automatic Fallback to 2400 bps.
Transmission time* :	Approx. 6 seconds
Resolution:	Horizontal: 203 pels/inch (8 dots/mm) Vertical: Standard: 98 lines/inch (3.85 lines/mm) Fine/Halftone: 196 lines/inch (7.7 lines/mm) Super fine: 391 lines/inch (15.4 lines/mm)
Automatic document feeder:	20 sheets max.
Recording system:	Thermal transfer recording
Halftone (grayscale):	64 levels
Display:	7 x 5 dots, 1 line by 16-digit display
Paper tray capacity: (16-to 20-lb. paper)	Letter: 200 sheets Legal: 200 sheets
Compression scheme:	MH, MR, MMR
Applicable telephone line:	Public switched telephone network
Compatibility:	ITU-T (CCITT) G3 mode
Input document size:	Automatic feeding: Width — 5.83 to 8.5" (148 to 216 mm) Length — 5.04 to 11" (128 to 279 mm) Manual feeding: Width — 5.83 to 8.5" (148 to 216 mm) Length — 5.04 to 39.4" (128 to 1000 mm)
Effective scanning width:	8.2" (208 mm) max.
Effective printing width:	8.1" (206 mm) max.
Contrast control:	Automatic/Dark selectable
Reception modes:	TEL/FAX/A.M. (Note: A.M. mode is for connecting an answering machine)
Copy function:	Single/Multi/Sort (99 copies/page)
Telephone function:	Yes (cannot be used if power fails)
Power requirements:	120 V AC, 60 Hz
Operating temperature:	41 to 95°F (5 to 35°C)
Humidity:	Maximum: 80 % RH
Power consumption:	Stand-by: 3.6 W Maximum: 100 W
Dimensions:	Width: 14.4" (365 mm) Depth: 19.0" (482 mm) (With attachments) Height: 10.6" (270 mm) (With attachments)
Weight:	Approx. 10.6 lbs. (4.8 kg)

* Based on ITU-T (CCITT) Test Chart #1 at standard resolution in Sharp special mode, excluding time for protocol signals (i.e., ITU-T phase C time only).

As a part of our policy of continuous improvement, SHARP reserves the right to make design and specification changes for product improvement without prior notice. The performance specifications figures indicated are nominal values of production units. There may be some deviation from these values in individual units.

[2] Operation panel



1. REDIAL key
Press this key to automatically redial the last number dialed.

2. SPEED DIAL key
Press this key to dial a fax or voice number using an abbreviated 2-digit Speed Dial number.

3. RECEPTION MODE key
Press this key to select the mode of reception.

4. Display
This displays messages and prompts during operation and programming.

5. VOLUME keys
Press these keys to adjust the volume of the speaker when the **SPEAKER** key has been pressed, the volume of the handset when the handset is lifted, or the volume of the ringer at all other times.

6. MEMORY key
Press this key to scan a document into memory before transmitting it.

7. SHIFT key
Press this key before pressing the Rapid key.

8. Rapid Dial keys
Press one of these keys to dial a fax number automatically.

9. Open LCR key
Press this key to register for Open LCR service and receive carrier rate data to your fax.

10. RESOLUTION key
Press this key to adjust the resolution for faxing or copying.

11. STOP key
Press this key to cancel an operations before they are completed.

12. Panel release
Grasp this finger hold and pull toward you to open the operation panel.

13. START key
Press this key to begin transmission when using Speed Dialing, Direct Keypad Dialing, or Normal Dialing.

14. COPY/HELP key
When a document is in the feeder, press this key to make a copy of a document. At any other time, press this key to print out the Help List, a quick reference guide to the opeation of your fax machine.

15. FUNCTION key
Press this key to select various special functions.

16. SPEAKER key
Press this key to listen to the line and fax tones through the speaker when faxing a document.
Note: **This is not a speakerphone.** You must pick up the handset to talk with the other party.

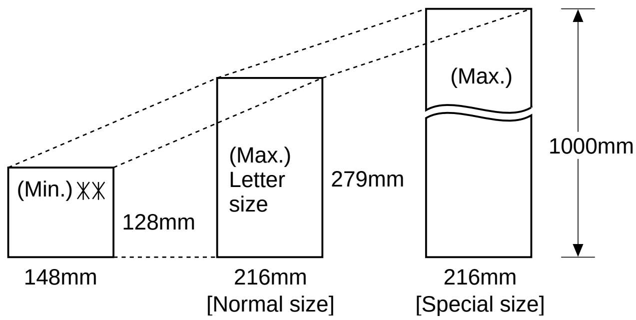
17. HOLD/SEARCH key
Press this key to search for an auto-dial number, or, during a phone conversation, press this key to put the other party on hold.

18. Number keys
Use these keys to dial numbers, and enter numbers and letters when storing auto-dial numbers.

[3] Transmittable documents

1. Document Sizes

Normal size	width	5.83" – 8.5"(148 – 216 mm)
	length	5.04" – 11"(128 – 279 mm)



※※ Use document carrier sheet for smaller documents.

* With special sizes, only one sheet can be fed into the machine at a time. Insert next page into feeder as current page is being scanned.

2. Paper Thickness & Weight

	4x6 series (788mm x 1091mm x 1000 sheets)		Square meter series	
	Minimum	Maximum	Minimum	Maximum
Feeder capacity	20 sheets, max.			
Paper weight	45kg	64.3kg	52g/m^2	74.3g/m^2
Paper thickness (ref.)	0.06mm	0.09mm	0.06mm	0.09mm
Paper size	128mm x 148mm ~ (MIN. SIZE) A4 (210mm x 297mm), Letter (216mm x 279mm)			

3. Document Types

- Normal paper

  Documents handwritten in pencil (No. 2 lead or softer), fountain pen, ball-point pen, or felt-tipped pen can be transmitted.

  Documents of normal contrast duplicated by a copying machine can also be transmitted.
- Diazo copy (blue print)

  Diazo copy documents of a normal contrast may be transmitted.
- Carbon copy

  A carbon copy may be transmitted if its contrast is normal.

4. Cautions on Transmitting Documents

- Documents written in yellow, greenish yellow, or light blue ink cannot be transmitted.
- Ink, glue, and correcting fluid on documents must be dry before the documents can be transmitted.
- All clips, staples and pins must be removed from documents before transmission.
- Patched (taped) documents should be copied first on a copier and then the copies used for transmission.
- All documents should be fanned before insertion into the feeder to prevent possible double feeds.

5. Automatic Document Feeder Capacity

Number of pages that can be placed into the feeder at anytime is as follows:

Normal size: max. ADF 20 sheets

Special size: single sheet only (manual feed)

NOTES:
- When you need to send or copy more pages than the feeder limit, place additional pages in feeder when last page in feeder is being scanned.
- Place additional pages carefully and gently in feeder. If force is used, double-feeding or a document jam may result.

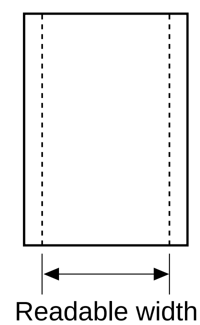
6. Readable Width & Length

The readable width and length of a document are slightly smaller than the actual document size.

Note that characters or graphics outside the effective document scanning range will not be read.

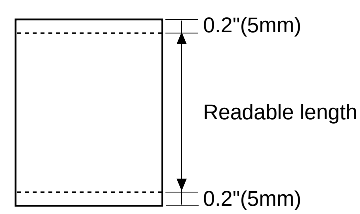
- **Readable width**

8.1" (206mm), max.



- **Readable length**

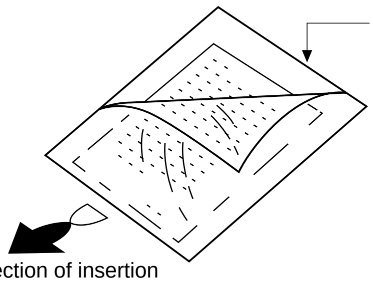
This is the length of the document sent minus 0.2" (5mm) from the top and bottom edges.



7. Use of Document Carrier Sheet

A document carrier sheet must be used for the following documents.

- Those with tears.
- Those smaller than size 5.83" (W) x 5.04" (L) (148 mm (W) x 128 mm (L)).
- Carbon-backed documents



NOTE: To transmit a carbon-backed document, insert a white sheet of paper between the carbon back of the document and the document carrier.

- Those containing an easily separable writing substance (e.g., tracking paper written on with a soft, heavy lead pencil).

NOTES:
- When using the document carrier, carefully read the instructions written on the back.
- If the document carrier is dirty, clean it with a soft, moist cloth, and then dry it before using for transmission.
- Do not place more than one document in the carrier at a time.

[4] Installation

1. Site selection

Take the following points into consideration when selecting a site for this model.

ENVIRONMENT

- The machine must be installed on a level surface.
- Keep the machine away from air conditioners, heaters, direct sunlight, and dust.
- Provide easy access to the front, back, and sides of the machine. In particular, keep the area in front of the machine clear, or the original document may jam as it comes out after scanning.
- The temperature should be between 5° and 35°C.
- The humidity should be between 30% and 85% (without condensation).

ELECTRICITY

AC 120V, 60Hz, grounded (3-prong) AC outlet is required.

Caution!

- Connection to a power source other than that specified will cause damage to the equipment and is not covered under the warranty.
- If your area experiences a high incidence of lightning or power surges, we recommend that you install a surge protector for the power and telephone lines. Surge protectors can be purchased at most telephone speciality stores.

If the machine is moved from a cold to a warm place...

Condensation may form on the reading glass if machine is moved from a cold to a warm place, this will prevent proper scanning of documents for transmission. Turn on the power and wait approximately 2 hours before using machine.

TELEPHONE JACK

A standard RJ11C telephone jack must be located near the machine. This is the telephone jack commonly used in most homes and offices.

- Plugging the fax machine into a jack which is not a RJ11C jack may result in damage to the machine or your telephone system. If you do not know what kind of jack you have, or needed to have one installed, contact the telephone company.

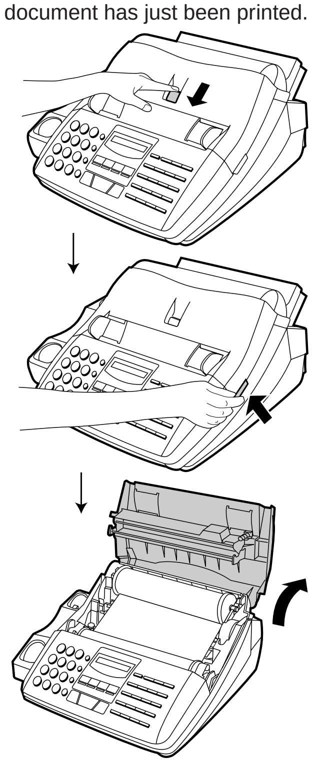
2. Loading the imaging film (UX-15CR/FO-15CR)

Your fax uses a roll of imaging film to create printed text and images. The print head in the fax applies heat to the imaging film to transfer ink to the paper. Follow the steps below to load or replace the film.

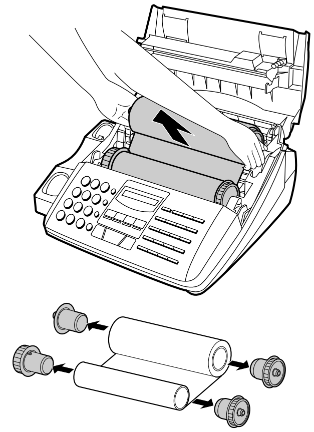
- The initial starter roll of imaging film included with your fax can print about 60 letter-size pages.
- When replacing the film, use a roll of Sharp UX-15CR/FO-15CR imaging film. One roll can print about 500 letter-size pages.

① Press the release marked **OPEN** and open the print compartment cover.

- **Caution!** The printing head (the strip of metal on the underside of the cover) applies heat to the printing film. It may be hot if a document has just been printed.

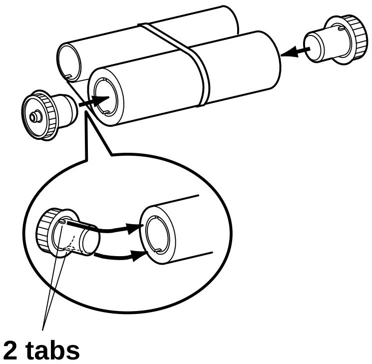


② If you are replacing the imaging film, take the old film out of the printing compartment and remove the three (3) green gears and the green flange from the ends of the spools.
DO NOT DISCARD THE GREEN GEARS AND THE GREEN FLANGE!

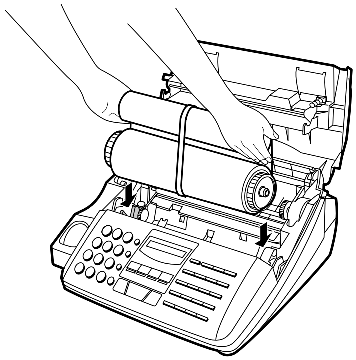


③ Take the new film out of its package, and insert two of the gears provided with the fax into the ends of the spool with film. Make sure that the two tabs on the gears fit properly into the slots in the ends of the spool.

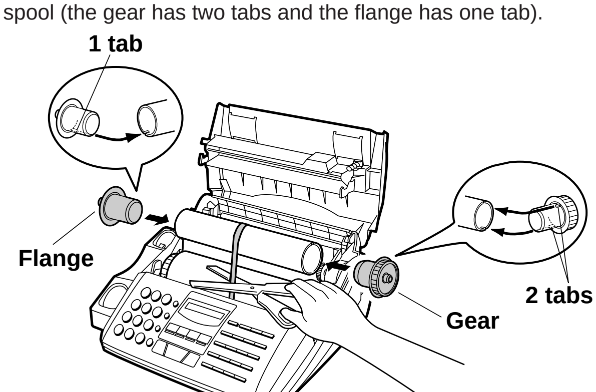
- Do not yet remove the band which holds the spools together.



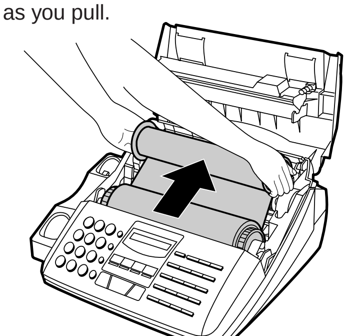
④ Hold the empty spool so that the end with only one slot is on the left, and lower the spools into the front of the printing compartment. The gears in the ends of the spool with film should fit into the slots on each side of the printing compartment.



⑤ Cut the band which holds the spools together with scissors, and remove it. Insert the remaining gear into the right end of the empty spool and the flange into the left end of the empty spool. Make sure the tabs on the gear and the flange fit into the slots in the ends of the spool (the gear has two tabs and the flange has one tab).

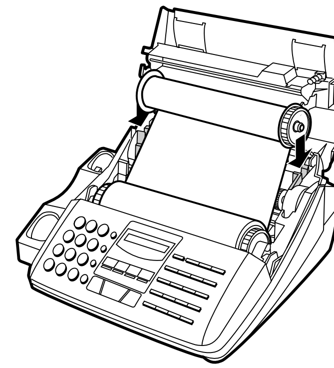


⑥ Pull the empty spool toward the back of the compartment, unwinding the film as you pull.

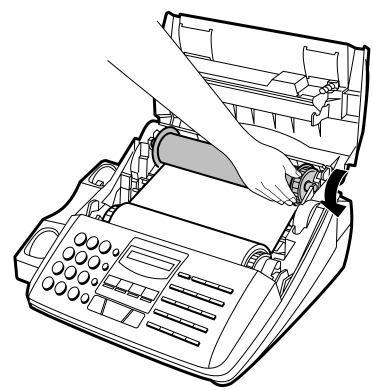


⑦ Insert the empty spool into the back of the compartment so that the gear and the flange fit into the slots on the sides of the compartment.

- Make sure that the gear engages with the gear below it.

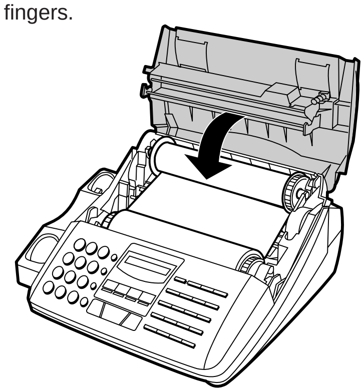


⑧ Wind the film slightly (rotate the gear on the right side of the empty spool) so that there is no slack in the film. Make sure that both edges of the film wind onto the spool evenly.



⑨ Close the print compartment cover, making sure it clicks into place.

- **Caution!** Close the cover slowly to make sure it doesn't pinch your fingers.



⑩ Load paper in the paper tray and then press the following keys to initialize the film.

Note: Paper must be loaded before the film can be initialized. To load paper, see Loading the Printing Paper.

FUNCTION 6 # → Display shows: INITIALIZE FILM → START

When to replace the imaging film

Replace the imaging film when the display shows:

FILM END

Use the following imaging film, which is available from your dealer or retailer: **Sharp UX-15CR/FO-15CR Imaging Film**

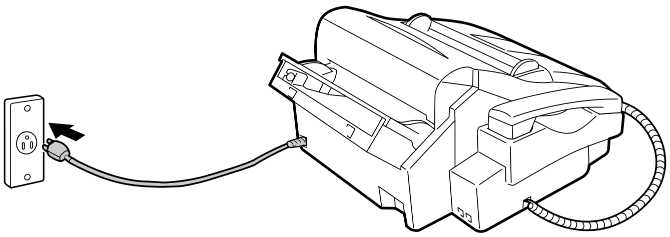
- **Caution!** The text of documents printed with the imaging film is visible on the used film. If confidential information has been printed, dispose of the film appropriately.

3. Assembly and connections

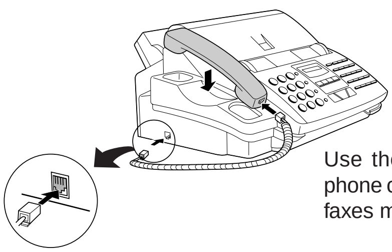
① Plug the power cord into a 120V, 60Hz, grounded(3-prong) outlet.

- **Caution**: Do not plug the power cord into any other kind of outlet. This will damage the machine and is not covered under the warranty.
- The machine does not have a power on/off switch, so the power is turned on and off by simply plugging in or unplugging the power cord.

Note: If your area experiences a high incidence of lightning or power surges, we recommend that you install surge protectors for the power and telephone lines. Surge protectors can be purchased at most telephone specialty stores.



② Connect the handset as shown and place it on the handset rest.

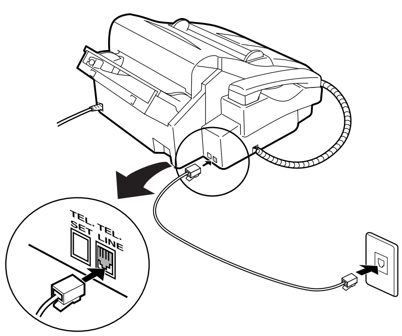


Make sure the handset cord goes into the unmarked jack on the side of the machine!

Use the handset to make ordinary phone calls, or to transmit and receive faxes manually.

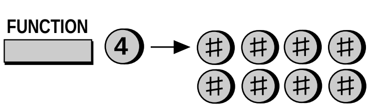
③ Insert one end of the line cord into the jack on the back of the machine marked **TEL.LINE**. Insert the other end into a standard (RJ11C) single-line wall telephone jack.

Be sure to insert the line into the **TEL.LINE** jack.
Do not insert into the **TEL.SET** jack.



Note: The fax machine is set for tone dialing. If you are on a pulse dial line, you must set the fax machine for pulse dialing.
Press the keys on the operation panel as follows:

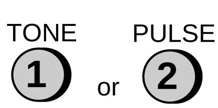
1. Press these keys:



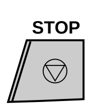
The display will show:

DIAL MODE

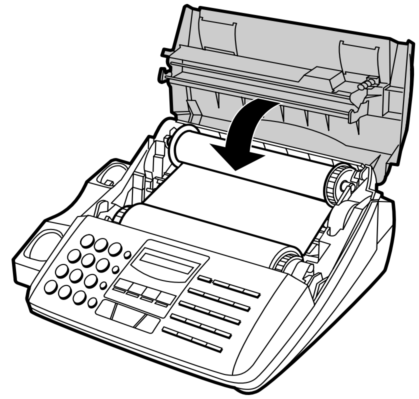
2. Press **1** to select tone dialing, or **2** to select pulse dialing.



3. Press the **STOP** key to return to the date and time display.



④ Insert the paper tray into the back of the fax as shown.



4. Loading printing paper

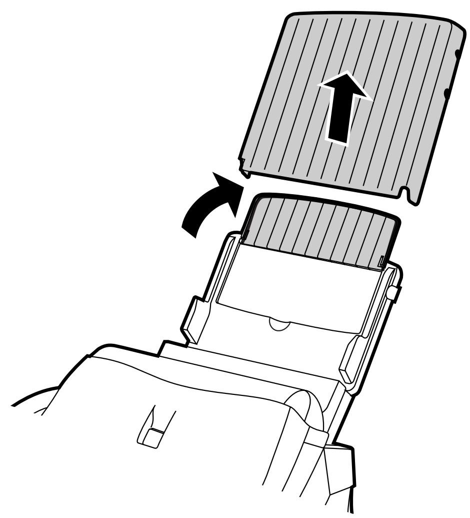
The paper tray holds the paper on which received documents and copies are printed. Up to 200 sheets of letter or legal paper from 16 to 20 lbs. (60 to 75 g/m^2) can be loaded in the tray. Less sheets can be loaded when using heavier paper. The maximum allowed paper weight is 24 lbs. (90 g/m^2).

Note: When receiving or copying documents, do not allow more than 100 pages to collect in the received documents outlet. Otherwise, the outlet may become obstructed, causing paper jams.

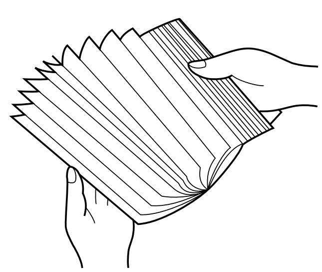
- **Caution!** Do not use the blank side of paper that has already been printed on.

① Remove the paper cover if it is on the paper tray.

- If you are going to load legal size paper, flip up the paper tray extender.

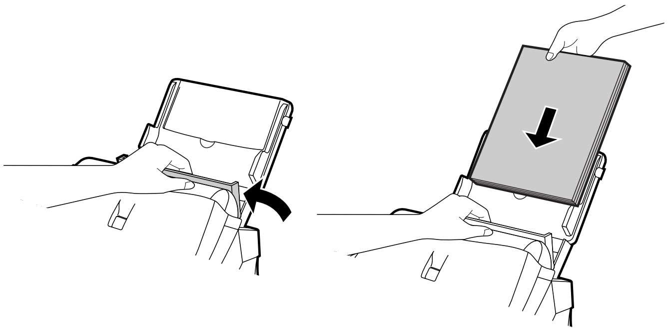


② Fan the paper, and then tap the edge against a flat surface to even the stack.



③ Pull the paper release plate toward you and insert the stack of paper into the tray, print side down.

- If paper remains in the tray, take it out and combine it into a single stack with the new paper before adding the new paper.

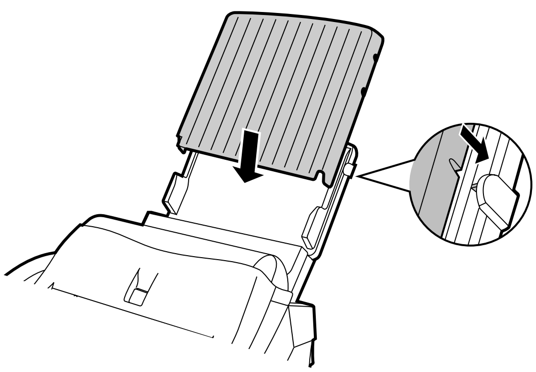


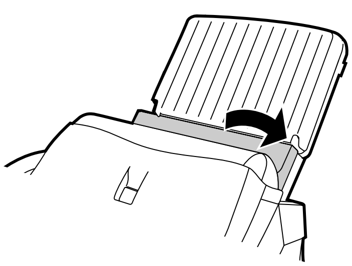
④ Replace the paper cover on the paper tray.

- **Important:** Be sure to replace the paper cover before you put back the paper release plate down.

Note: If the display shows the following alternating messages when making a copy or receiving a fax, check the paper tray. If the tray is empty, add paper and then press the **START** key. If there is paper, make sure it is inserted correctly and then press the **START** key.

SET PAPER &
↓ ↑
PRESS START KEY





⑤ The fax has been set at the factory to scale the size of received faxes to letter size paper. If you have loaded legal paper, you must change the paper size setting to legal. Press these keys:

The display will show: PAPER SIZE SET — FUNCTION 6 → * *

Press **1** to select LETTER, **2** to select LEAGAL. — LETTER 1 or LEAGAL 2

The display will show: COPY CUT-OFF

Press the **STOP** key to return to the date and time display. — STOP

⑥ Your fax has been set at the factory to print at normal contrast.

Depending on the type of paper you have loaded, you may find that you obtain better print quality by changing the setting to LIGHT.

Press these keys:

The display will show: PRINT CONTRAST — FUNCTION 6 → * * *

Press **1** to select NORMAL or **2** to select LIGHT. — NORMAL 1 or LIGHT 2

The display will show: PAPER SIZE SET

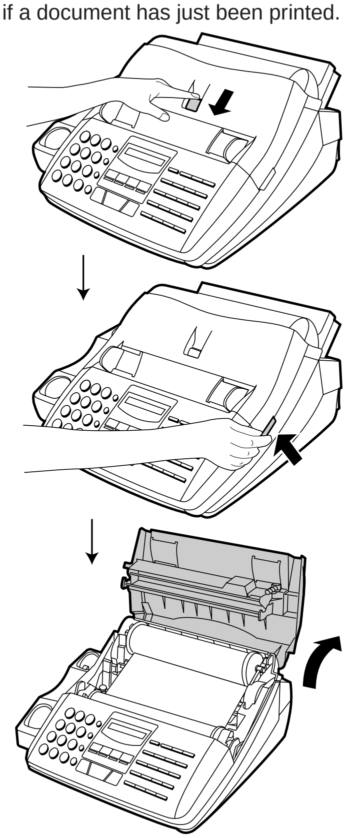
Press the **STOP** key to return to the date and time display. — STOP

5. Clearing paper jams

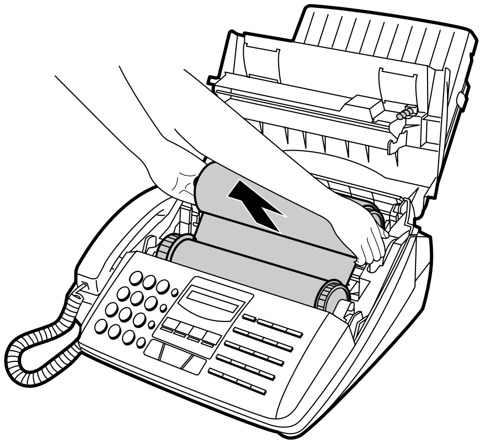
If a document doesn’t feed properly during transmission or copying, or DOCUMENT JAMMED appears in the display, first try pressing the **START** key. If the document doesn’t feed out, open the operation panel (grasp the front edge at the "PANEL RELEASE" mark and pull up) and pull it out gently.

① Press the release marked OPEN and open the print compartment cover.

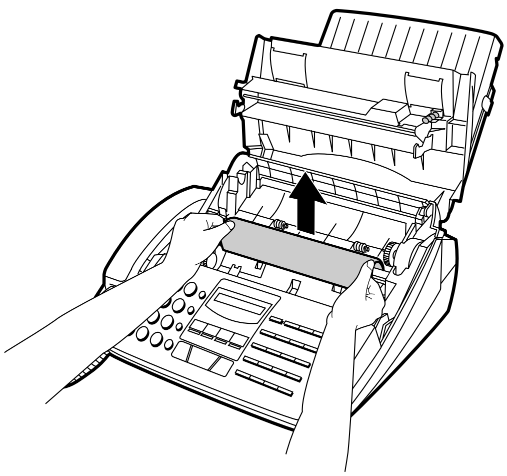
- **Caution!** The printing head (the strip of metal on the underside of the frame) applies heat to the imaging film. It may be hot if a document has just been printed.



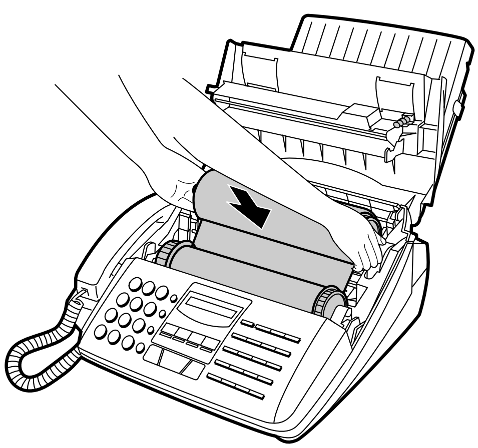
② Remove the imaging film from the printing compartment and set it on a sheet of paper.



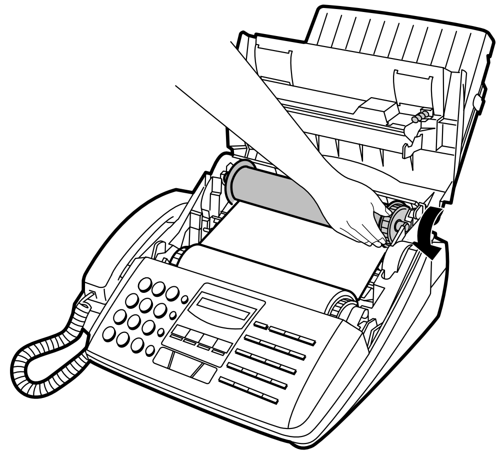
③ Gently pull the jammed paper out of the printing compartment.



④ Replace the imaging film, making sure that the flange goes into the rear slot on the left side of the printing compartment. Also, make sure that the right, rear gear engages with the gear below it.

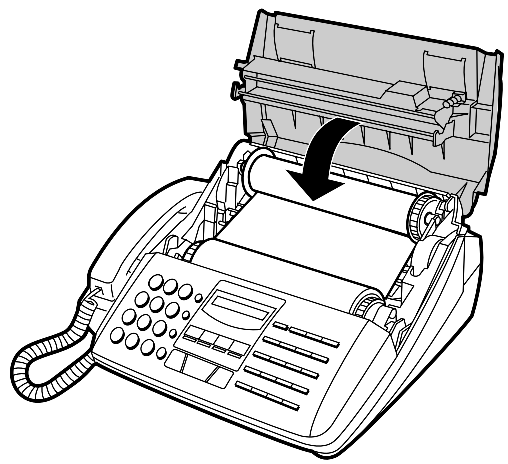


⑤ Wind the film slightly (rotate the gear on the right side of the rear spool) so that there is no slack in the film. Make sure that both edges of the film wind onto the spool evenly.



⑥ Close the print compartment cover, making sure it clicks into place.

- **Caution!** Close the cover slowly to make sure it doesn't pinch your fingers.



[5] Quick reference guide

ENTERING YOUR NAME AND NUMBER

1. Press: FUNCTION 3 # #

   Display shows: OWN NUMBER SET
2. Press: START
3. Enter your fax number (max. of 20 digits) by pressing the number keys.
- ♦ To insert a space between digits, press the # key.
- ♦ If you make a mistake, press the **SPEED DIAL** key to backspace and clear the mistake.

4. Press: START
5. Enter your name by pressing the appropriate number keys as shown below.
- ♦ To enter two letters in succession that require the same key, press the **SPEAKER** key after entering the first letter.

SPACE = 1 1	J = 5 5	T = 8 8
A = 2 2	K = 5 5 5	U = 8 8 8
B = 2 2 2	L = 5 5 5 5	V = 8 8 8 8
C = 2 2 2 2	M = 6 6	W = 9 9
D = 3 3	N = 6 6 6	X = 9 9 9
E = 3 3 3	O = 6 6 6 6	Y = 9 9 9 9
F = 3 3 3 3	P = 7 7	Z = 9 9 9 9 9
G = 4 4	Q = 7 7 7	
H = 4 4 4	R = 7 7 7 7	
I = 4 4 4 4	S = 7 7 7 7 7	

- To change case, press the **REDIAL** key.

  Press # or ⋇ to scroll through symbols and special characters.

6. When finished, press: START STOP

SETTING THE DATE AND TIME

1. Press: FUNCTION 3 ⋇ ⋇ ⋇ ⋇

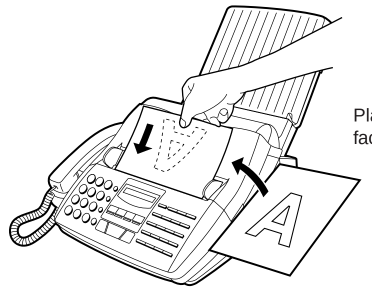
   Display shows: DATE & TIME SET
2. Press: START
3. Enter two digits for the month (01 to 12).
4. Enter two digits for the day (01 to 31).
5. Enter four digits for the year (Ex: 2000).
6. Enter two digits for the hour (01 to 12) and two digits for the minute (00 to 59).
7. Press ⋇ for A.M. or # for P.M.
8. When finished, press: START STOP

STORING AND CLEARING AUTO DIAL NUMBERS

1. Press: FUNCTION 3 #

   Display shows: FAX/TEL # MODE
2. Press **1** to store a number or **2** to clear a number.
3. Enter a 2-digit number (from "01" to "99") by pressing the number keys. This will be the Speed Dial number. (If you are clearing a number, go to Step 7.)
4. Enter the full fax/telephone number.
5. Press: START
6. Enter the name of the location by pressing number keys (Refer to the letter entry table in *ENTERING YOUR NAME AND NUMBER*.)
7. Press: START STOP

SENDING FAXES



Place your document (up to 20 pages) face down in the document feeder.

Normal Dialing

1. Lift the handset or press: SPEAKER
2. Dial the fax number.
3. Wait for the reception tone (if a person answers, ask them to press their Start key).
4. Press: START

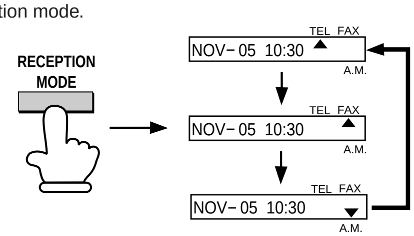
Rapid Key Dialing
Press the appropriate Rapid Key (if the Rapid Key is from 19 to 36, press the **SHIFT** key first).
Transmission will begin automatically.

Speed Dialing

1. Press: SPEED DIAL
2. Enter 2-digit Speed Dial number.
3. Press: START

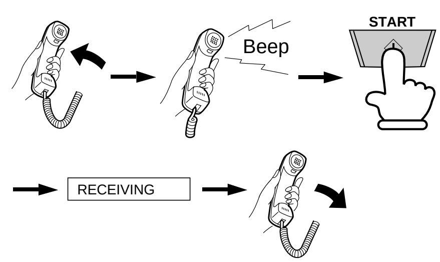
RECEIVING FAXES

Press the **RECEPTION MODE** key until the appears in the display points to the desired reception mode.



FAX mode: The fax machine automatically answers on four rings and receives the incoming document.

TEL mode:



A.M. mode: Select this mode when an answering machine is connected to the fax and the answering machine is turned on.

MEMO

CHAPTER 2. ADJUSTMENTS

[1] Adjustments

General

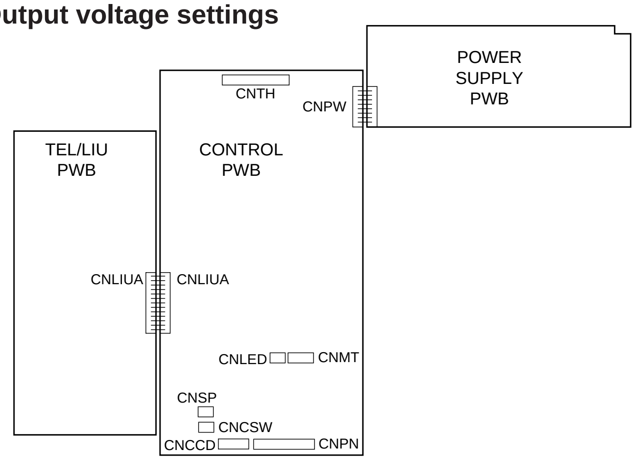
Since the following adjustments and settings are provided for this model, make adjustments and/or setup as necessary.

1. Adjustments

Adjustments of output voltage (FACTORY ONLY)

1. Install the power supply unit in the machine.
2. Set the recording paper and document.
3. When the document is loaded, power is supplied to the output lines. Confirm that outputs are within the limits below.

Output voltage settings



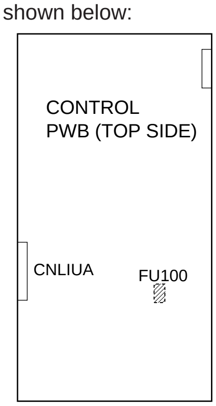
Output	Voltage limits
+5V	4.75V ~ 5.25V
+24V	23.3V ~ 24.7V

Connector No. / Pin No.	CNPW
1	+24V
2	+24V
3	MG
4	MG
5	+5V
6	DG

2. IC protectors replacement

ICPs (IC Protectors) are installed to protect the motor driver circuit. ICPs protect various ICs and electronic circuits from an overcurrent condition.

The location of ICPs are shown below:



(1) FU100 (KAB2402) is installed in order to protect IC's from an overcurrent generated in the motor drive circuit. If FU100 is open, replace it with a new one.

3. Settings

(1) Dial mode selector

DIAL mode (Soft Switch No. SWB4 DATA No. 3)

(step 1) Select "OPTION SETTING".

KEY : FUNCTION ④

DISPLAY: OPTION SETTING ⇔ PRESS ✕ OR #

(step 2) Select "DIAL MODE".

KEY: Push # until " DIAL MODE " is indicated because the number of #s changes by the model.

Cursor
When initially registering, the mode shows 1=TONE. When registering again, the mode which was registered formerly is shown.

DISPLAY: DIAL MODE ⇔ 1=TONE, 2=PULSE

(step 3) Select, using "1" or "2".

KEY: ①

DISPLAY: TONE SELECTED

KEY: ②

DISPLAY: PULSE SELECTED

(step 4) End, using the "STOP" key.

KEY: STOP

4. Volume adjustment

You can adjust the volume of the speaker and ringer using the **UP** and **DOWN** keys.

(1) Speaker

① Press the **SPEAKER** key.

② Press the **UP** or **DOWN** key.

Display:

SPEAKER: HIGH
↕
SPEAKER: MIDDLE
↕
SPEAKER: LOW

③ When the display shows the desired volume level, press the **SPEAKER** key to turn off the speaker.

(2) Handset

① Lift the handset.

② Press the **UP** or **DOWN** key.

Display:

RECEIVER: HIGH
↕
RECEIVER: MIDDLE
↕
RECEIVER: LOW

③ When the display shows the desired volume level, replace the handset.

(3) Ringer

① Press the **UP** or **DOWN** key. (Make sure the **SPEAKER** key has not been pressed and the handset is not lifted.)

Display:

RINGER: HIGH
↕
RINGER: MIDDLE
↕
RINGER: LOW
↕
RINGER OFF: OK?

The ringer will ring once at the selected level, then the date and time will reappear in the display.

② If you selected RINGER OFF: OK?, press the **START** key.

[2] Diagnostics and service soft switch

1. Operating procedure

(1) Entering the diagnostic mode

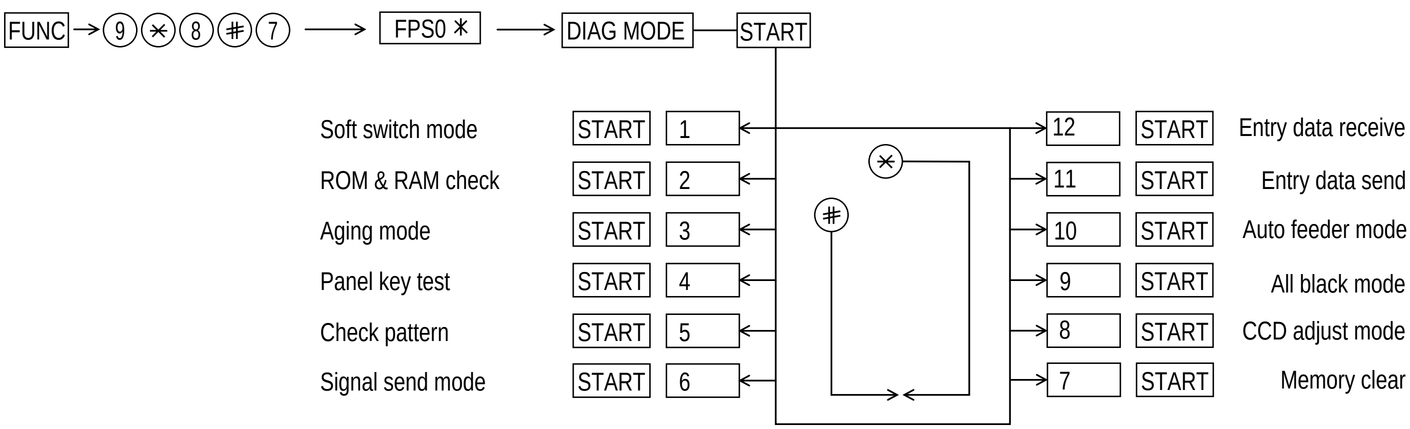
Press FUNC → 9 → * → 8 → # → 7 , and the following display will appear.

ROM Ver. FPS0 * After 2 sec: DIAG MODE

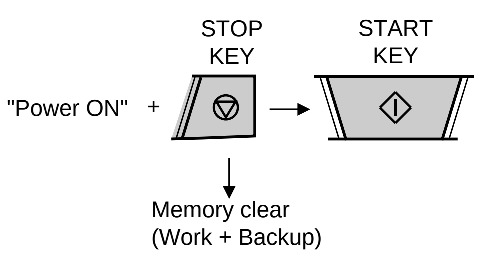
FPS0 *

Then press the START key. Select the desired item with the * key or the # key or select with the rapid key. Enter the mode with the START key.

(Diag•specifications)



If the diag mode cannot be set, repeat the diag mode operation, performing the following operation.
After the power is turned on and "WAIT A MOMENT" is indicated, press the STOP key.



In relation with the process response (request from Production Engineering) "WAIT A MOMENT" clock indication may appear depending on STOP key timing. If the STOP key is held down, "MEMORY CLEAR?" appears.

2. Diagnostic items

ITEM No.	DIRECT key	Contents	Function
1	1	SOFT SWITCH MODE	Soft switches are displayed and changed. List can be output.
2	2	ROM & RAM CHECK	ROM is sum-checked, and RAM is matched. Result list is output.
3	3	AGING MODE	10 sheets of check patterns are output every 5 minutes per sheet.
4	4	PANEL KEY TEST	Panel keys are tested. Result list is output.
5	5	CHECK PATTERN	Check pattern is output.
6	6	SIGNAL SEND MODE	Various signals of FAX communication are output.
7	7	MEMORY CLEAR	Back-up memory is cleared, and is set at delivery.
8	8	CCD ADJUST MODE	Optical system is adjusted.
9	9	ALL BLACK PRINT	To check the print head, whole dots are printed over the interval of 2 m.
10	10	AUTO FEEDER MODE	Insertion and discharge of document are tested.
11	11	ENTRY DATA SEND	Registered content is sent.
12	12	ENTRY DATA RECEIVE	Registered content is received, and its list is output.

3. Diagnostic items description

3. 1. Soft switch mode

Used to change the soft switch settings.

The soft switch which is stored internally is set by using the keys.

The available soft switches are SW-A1 to SW-N3.

The content of soft switches is shown in page 2-5 to 2-18.

The contents are set to factory default settings.

3. 2. ROM & RAM check

ROM executes the sum check, and RAM executes the matching test. The result will be notified with the number of short sounds of the buzzer as well as by printing the ROM & RAM check list.

Number of short sounds of buzzer 0 → No error
1 → ROM error
2 → RAM error (32Kbyte)

3. 3. Aging mode

If any document is first present, copying will be executed sheet by sheet. If no document is present, the check pattern will be printed sheet by sheet. This operation will be executed at a rate of one sheet per 5minutes, and will be ended at a total of 10 sheets.

3. 4. Panel key test

This mode is used to check whether each key operates properly or not. Press the key on the operation panel, and the key will be displayed on the display. Therefore, press all keys. At this time, finally press the STOP key.

When the STOP key is pressed, the keys which are not judged as "pressed" will be printed on the result list.

- LED part of the contact image sensor (CIS) is kept on during the term from when "START" of the panel test mode to end with the STOP key.

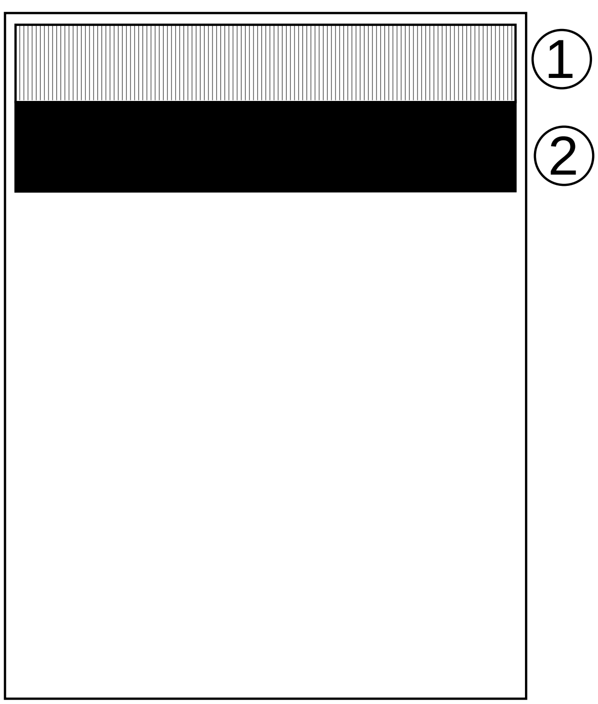
3. 5. Check pattern

This mode is used to check the state of the printing head. It is ended with the following pattern printed on one printing sheet.

① Longitudinal stripe 2 Approx. 30 mm

2 black dots and 2 white dots are repeatedly progressed on one line.

② Full black Approx. 30 mm



3. 6. Signal send mode

This mode is used to send various signals to the circuit during FAX communication. Every push of START key sends a signal in the following sequence. Moreover, the signal sound is also output to the speaker when the line monitor of the soft switch is on.

[1] No signals (CML ON)

[2] 14400BPS (V.33)

[3] 12000BPS (V.33)

[4] 14400BPS (V.17)

[5] 12000BPS (V.17)

[6] 9600BPS (V.17)

[7] 7200BPS (V.17)

[8] 9600BPS (V.29)

[9] 7200BPS (V.29)

[10] 4800BPS (V27ter)

[11] 2400BPS (V27ter)

[12] FLAG

[13] 2100Hz

[14] 1100Hz

3. 7. Memory clear

This mode is used to clear the backup memory and reset to the default settings.

3. 8. CCD adjust mode

This mode is used to adjust the optical system. Since the copy is function performed, set the original. To abort the copy operation, press the STOP key. To restart press the START key. When the copy is completed or when the STOP key is pressed in the interruption state, exit from this mode occurs.

3. 9. All black print

This mode is used to check the state of the printing head and intentionally overheat it. Whole dots are printed over the interval of 2 m. If it is overheated or the printing sheet is jammed, press STOP key for the end.

3. 10. Auto feeder mode

In this mode, a document is inserted and discharged to check the auto feed function.

After this mode is started, set a document, and the document feed will be automatically tested.

3. 11. Entry data send

This mode is used to send the registered data to the other machine and make the other machine copy the registered content.

Before sending in this mode, it is necessary to set the other machine at the entry data receive mode.

The following, information will be sent to the remote machine:

1. Telephone list data
2. Sender register data
3. Optional setting content
4. Soft switch content
5. Junk fax number list
6. Timer reservation data (only on the model which timer reservation is possible)
7. Recording setting list data

3. 12. Entry data receive

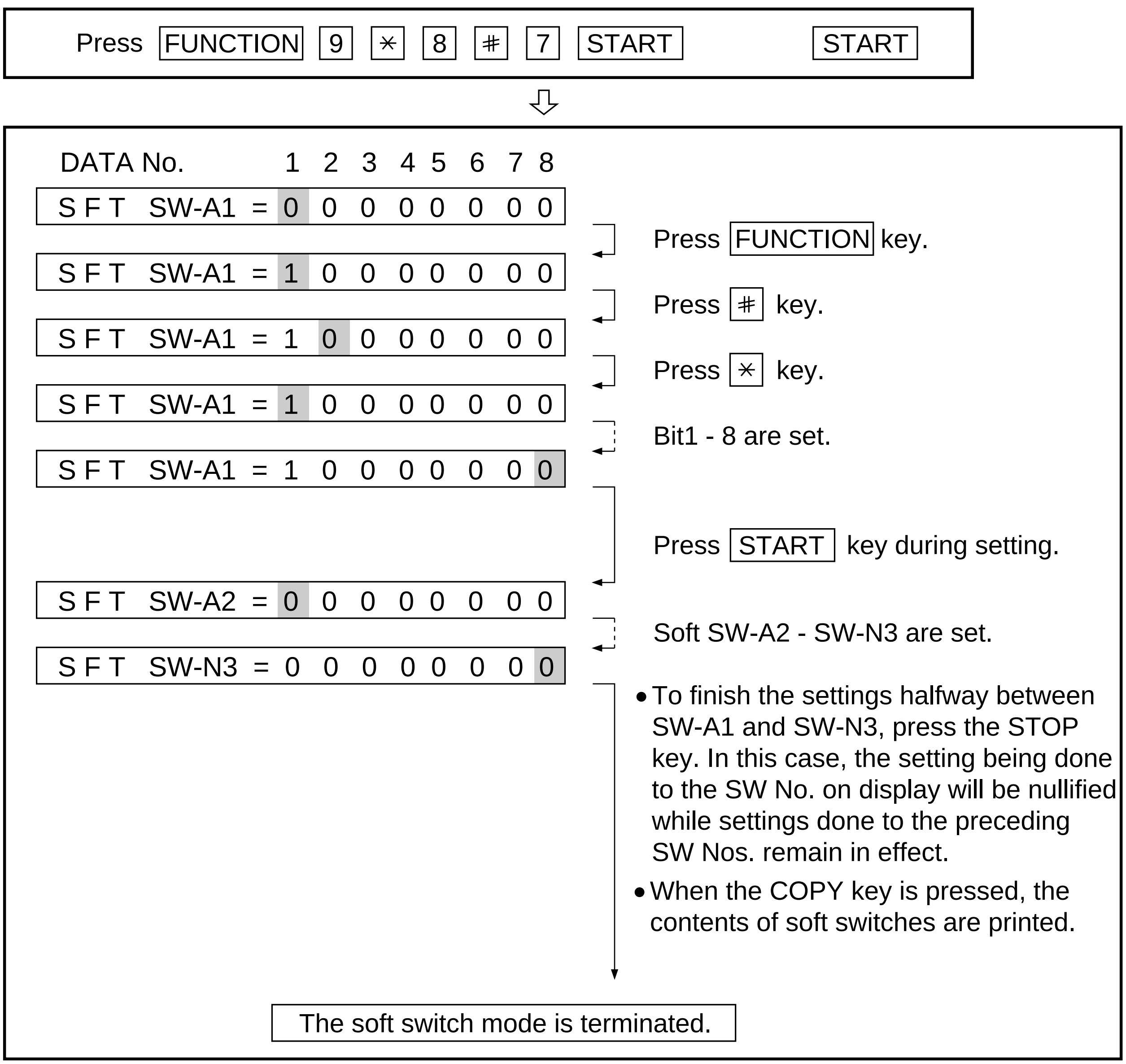
In this mode, the registered data sent from the other machine is received and the received data is registered in the machine. When this mode is used for receiving, the other machine must be in the entry data send mode.

After receiving is completed, the following lists are printed.

1. Telephone list data
2. Sender register data (The passcode No. is also printed if the polling function is provided.)
3. Optional setting list
4. Soft switch content
5. Junk fax number list
6. Timer reservation list (only model which timer communication is possible)
7. Recording setting list data

4. How to make soft switch setting

To enter the soft switch mode, press the following key entries in sequence.



5. Soft switch description

• Soft switch

SW NO.	DATA NO.	ITEM	Switch setting and function: 1	Switch setting and function: 0	Initial setting	Remarks
SW-A1	1	Protect from echo	No	Yes	0	
	2	Forced 4800 BPS reception	Yes	No	0	
	3	Footer print	Yes	No	0	
	4	Length limitation of copy/send/receive	No limit	Copy/send: 1m Receive: 1.5m	0	
	5	CSI transmission	No transmitted	Transmitted	0	
	6	DIS receive acknowledgement during G3 transmission	Twice	NSF: Once DIS: Twice	0	
	7	Non-modulated carrier for V29 transmission modem	Yes	No	0	
	8	EOL detect timer	25 s	13 s	0	

SW NO.	DATA NO.	ITEM	V.33 14400	V.33 12000	V.17 14400	V.17 12000	V.17 9600	V.17 7200	V.29 9600	V.29 7200	V.27 ter 4800	V.27 ter 2400	Initial setting	Remarks
SW-A2	1	Modem speed	0	0	1	1	1	1	0	0	0	0	1	
	2		1	1	0	0	0	0	0	0	0	0	0	
	3		0	1	0	1	0	1	0	1	1	0	0	
	4		0	0	0	0	1	1	1	1	0	0	0	

SW NO.	DATA NO.	ITEM	1	0	Initial setting	Remarks
SW-A2	5	Sender's information transmit	No	Yes	0	
	6	Reserved			0	
	7	Communication error treatment in RTN sending mode (reception)	No communication error	Communication error	0	
	8	CNG transmission	No	Yes	0	

SW NO.	DATA NO.	ITEM		1000ms	750ms	500ms	75ms	Initial setting	Remarks
SW-A3	1	CED tone signal interval	No. 1	1	1	0	0	0	
	2		No. 2	1	0	1	0	0	

SW NO.	DATA NO.	ITEM	1	0	Initial setting	Remarks
SW-A3	3	MR coding	No	Yes	0	
	4	ECM mode	No	Yes	0	OPTION
	5	ECM MMR mode	No	Yes	0	
	6	Reserved			0	
	7	Reserved			0	
	8	Reserved			0	

SW NO.	DATA NO.	ITEM	Switch setting and function	Initial setting	Remarks
SW-A4	1	Signal transmission level	Binary input	0	
	2		No. = 16 8 4 2 1	1	
	3		1 2 3 4 5	0	
	4		0 1 0 1 0	1	
	5			0	

SW NO.	DATA NO.	ITEM	1	0	Initial setting	Remarks
SW-A4	6	Protocol monitor (error print)	Printed at com. error	Not printed	0	
	7	Protocol monitor	Yes	No	0	
	8	Line monitor	Yes	No	0	

SW NO.	DATA NO.	ITEM		7.2km	3.6km	1.8km	0km	Initial setting	Remarks
SW-A5	1	Digital line equalization setting (Reception)	No. 1	1	1	0	0	0	
	2		No. 2	1	0	1	0	1	
	3	Digital line equalization setting (Transmission)	No. 3	1	1	0	0	0	
	4		No. 4	1	0	1	0	1	

SW NO.	DATA NO.	ITEM		7.2km	0km	Initial setting	Remarks
SW-A5	5	Digital cable equalizer setting (Reception for Caller ID)	No. 5	1	0	1	
	6		No. 6	1	0	1	

SW NO.	DATA NO.	ITEM	1	0	Initial setting	Remarks
SW-A5	7	Error criterion	10 ~ 20 %	5 ~ 10 %	0	
	8	Anti junk fax check	Yes	No	0	OPTION

<table>
<tr><th rowspan="2">SW NO.</th><th rowspan="2">DATA NO.</th><th rowspan="2">ITEM</th><th colspan="5">Switch setting and function</th><th rowspan="2">Initial setting</th><th rowspan="2">Remarks</th></tr>
<tr><th colspan="3">1</th><th colspan="2">0</th></tr>
<tr><td rowspan="8">SW
I
A6</td><td>1</td><td>Auto gain control (MODEM)</td><td colspan="3">Enable</td><td colspan="2">Disable</td><td>1</td><td></td></tr>
<tr><td>2</td><td>End Buzzer</td><td colspan="3">Yes</td><td colspan="2">No</td><td>1</td><td></td></tr>
<tr><td>3</td><td>Disconnect the line when DIS is received in RX mode</td><td colspan="3">No</td><td colspan="2">Yes</td><td>1</td><td></td></tr>
<tr><td>4</td><td>Equalizer freeze control (MODEM)</td><td colspan="3">On</td><td colspan="2">Off</td><td>0</td><td></td></tr>
<tr><td>5</td><td>Equalizer freeze control 7200BPS only</td><td colspan="3">No</td><td colspan="2">Yes</td><td>0</td><td></td></tr>
<tr><td>6</td><td>CNG transmission in manual TX mode</td><td colspan="3">Yes</td><td colspan="2">No</td><td>1</td><td></td></tr>
<tr><td>7</td><td>Reserved</td><td colspan="3"></td><td colspan="2"></td><td>0</td><td></td></tr>
<tr><td>8</td><td>Modem speed automatic fallback when RX level is under -40dBm</td><td colspan="3">Yes</td><td colspan="2">No</td><td>0</td><td></td></tr>
<tr><td rowspan="2">SW
I
B1</td><td>1
2
3
4</td><td>Recall interval</td><td colspan="5">Binary input
No. = 8 4 2 1
1 2 3 4
0 1 0 1</td><td>0
1
0
1</td><td>OPTION</td></tr>
<tr><td>5
6
7
8</td><td>Recall times</td><td colspan="5">Binary input
No. = 8 4 2 1
5 6 7 8
0 0 1 0</td><td>0
0
1
0</td><td>OPTION</td></tr>
<tr><td rowspan="9">SW
I
B2</td><td>1</td><td>Dial pausing (sec/pause)</td><td colspan="3">4 sec</td><td colspan="2">2 sec</td><td>0</td><td></td></tr>
<tr><td>2</td><td>Dial tone detection (before outo dial)</td><td colspan="3">No</td><td colspan="2">Yes</td><td>1</td><td></td></tr>
<tr><td>3</td><td>Reserved</td><td colspan="3"></td><td colspan="2"></td><td>0</td><td></td></tr>
<tr><td>4</td><td>Busy tone detection (after auto dial)</td><td colspan="3">No</td><td colspan="2">Yes</td><td>0</td><td></td></tr>
<tr><td></td><td rowspan="3">Waiting time after dialing</td><td></td><td>45 seconds</td><td>55 seconds</td><td>90 seconds</td><td>140 seconds</td><td></td><td></td></tr>
<tr><td>5</td><td>No.5</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td></td></tr>
<tr><td>6</td><td>No.6</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td></td></tr>
<tr><td>7</td><td>Reserved</td><td colspan="3"></td><td colspan="2"></td><td>0</td><td></td></tr>
<tr><td>8</td><td>Reserved</td><td colspan="3"></td><td colspan="2"></td><td>0</td><td></td></tr>
<tr><td rowspan="9">SW
I
B3</td><td>1</td><td>Reserved</td><td colspan="3"></td><td colspan="2"></td><td>0</td><td></td></tr>
<tr><td>2</td><td>Reserved</td><td colspan="3"></td><td colspan="2"></td><td>0</td><td></td></tr>
<tr><td>3</td><td>Reserved</td><td colspan="3"></td><td colspan="2"></td><td>0</td><td></td></tr>
<tr><td>4</td><td>Reserved</td><td colspan="3"></td><td colspan="2"></td><td>0</td><td></td></tr>
<tr><td>5</td><td>Reserved</td><td colspan="3"></td><td colspan="2"></td><td>0</td><td></td></tr>
<tr><td></td><td rowspan="3">Auto dial mode Delay timer of before line connect</td><td></td><td>0 second</td><td>1.5 seconds</td><td>3.0 seconds</td><td>4.5 seconds</td><td></td><td></td></tr>
<tr><td>6</td><td>No.6</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td></td></tr>
<tr><td>7</td><td>No.7</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td></td></tr>
<tr><td>8</td><td>Hold key</td><td colspan="3">Enable</td><td colspan="2">Disable</td><td>1</td><td></td></tr>
<tr><td rowspan="9">SW
I
B4</td><td></td><td rowspan="3">Auto dial mode Delay timer of after line connect</td><td></td><td>1.7 seconds</td><td>3.0 seconds</td><td>3.6 seconds</td><td>4.0 seconds</td><td></td><td></td></tr>
<tr><td>1</td><td>No.1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td></td></tr>
<tr><td>2</td><td>No.2</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td></td></tr>
<tr><td>3</td><td>Dial mode</td><td colspan="3">Tone</td><td colspan="2">Pulse</td><td>1</td><td>OPTION</td></tr>
<tr><td>4</td><td>Pulse → Tone change function by ⋇ key</td><td colspan="3">Enable</td><td colspan="2">Disable</td><td>1</td><td></td></tr>
<tr><td>5</td><td>Dial pulse make/break ratio (%)</td><td colspan="3">40/60</td><td colspan="2">33/67</td><td>1</td><td></td></tr>
<tr><td>6</td><td>Reserved</td><td colspan="3"></td><td colspan="2"></td><td>0</td><td></td></tr>
<tr><td>7</td><td>Reserved</td><td colspan="3"></td><td colspan="2"></td><td>0</td><td></td></tr>
<tr><td>8</td><td>Recalling fixed only one time when dialing was unsuccessful without detecting busy tone signal</td><td colspan="3">Yes</td><td colspan="2">No</td><td>1</td><td></td></tr>
<tr><td rowspan="4">SW
I
B5</td><td>1
2
3
4
5</td><td>DTMF signal transmission level (Low)</td><td colspan="5">Binary input
No. = 16 8 4 2 1
1 2 3 4 5
0 1 0 1 1</td><td>0
1
0
1
1</td><td></td></tr>
<tr><td>6</td><td>Reserved</td><td colspan="3"></td><td colspan="2"></td><td>0</td><td></td></tr>
<tr><td>7</td><td>Reserved</td><td colspan="3"></td><td colspan="2"></td><td>0</td><td></td></tr>
<tr><td>8</td><td>Reserved</td><td colspan="3"></td><td colspan="2"></td><td>0</td><td></td></tr>
</table>

<table>
<tr><th rowspan="2">SW NO.</th><th rowspan="2">DATA NO.</th><th rowspan="2">ITEM</th><th colspan="5">Switch setting and function</th><th rowspan="2">Initial setting</th><th rowspan="2">Remarks</th></tr>
<tr><th colspan="2">1</th><th colspan="3">0</th></tr>
<tr><td rowspan="8">SW
I
B6</td><td>1</td><td rowspan="5">DTMF signal transmission level (High)</td><td colspan="5" rowspan="5">Binary input
No. = 16 8 4 2 1
1 2 3 4 5
0 0 1 1 1</td><td>0</td><td></td></tr>
<tr><td>2</td><td>0</td><td></td></tr>
<tr><td>3</td><td>1</td><td></td></tr>
<tr><td>4</td><td>1</td><td></td></tr>
<tr><td>5</td><td>1</td><td></td></tr>
<tr><td>6</td><td>Dial tone detection (LCR center call)</td><td colspan="2">No</td><td colspan="3">Yes</td><td>0</td><td></td></tr>
<tr><td>7</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>8</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td rowspan="10">SW
I
C1</td><td></td><td rowspan="3">Reading slice (Binary)</td><td></td><td>Factory setting</td><td>Light</td><td>Dark</td><td>Darker in dark</td><td></td><td></td></tr>
<tr><td>1</td><td>No. 1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td></td></tr>
<tr><td>2</td><td>No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td></td></tr>
<tr><td></td><td rowspan="3">Reading slice (Half tone)</td><td></td><td>Factory setting</td><td>Light</td><td>Dark</td><td>Darker in dark</td><td></td><td></td></tr>
<tr><td>3</td><td>No. 3</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td></td></tr>
<tr><td>4</td><td>No. 4</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td></td></tr>
<tr><td>5</td><td>Line density selection</td><td colspan="2">Fine</td><td colspan="3">Standard</td><td>0</td><td>OPTION</td></tr>
<tr><td>6</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>7</td><td>MTF correction in half tone mode</td><td colspan="2">No</td><td colspan="3">Yes</td><td>0</td><td></td></tr>
<tr><td>8</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td rowspan="9">SW
I
D1</td><td>1</td><td rowspan="4">Number of rings for auto receive</td><td colspan="5" rowspan="4">Binary input
No. = 8 4 2 1
1 2 3 4
0 1 0 0</td><td>0</td><td>OPTION</td></tr>
<tr><td>2</td><td>1</td><td></td></tr>
<tr><td>3</td><td>0</td><td></td></tr>
<tr><td>4</td><td>0</td><td></td></tr>
<tr><td>5</td><td>Automatic switching manual to auto receive mode</td><td colspan="2">Reception after 5 rings</td><td colspan="3">No reception</td><td>0</td><td></td></tr>
<tr><td>6</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td></td><td rowspan="3">CI detect frequency</td><td></td><td>As PTT</td><td>11.5Hz</td><td>13.0Hz</td><td>20.0Hz</td><td></td><td></td></tr>
<tr><td>7</td><td>No.7</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td></td></tr>
<tr><td>8</td><td>No.8</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td></td></tr>
<tr><td rowspan="13">SW
I
D2</td><td></td><td rowspan="8">Distinctive ringing setting
(PATTERN 4 and 5 are for CANADA only)</td><td></td><td>No. 1</td><td>No. 2</td><td colspan="2">No. 3</td><td></td><td>OPTION</td></tr>
<tr><td></td><td>OFF</td><td>0</td><td>0</td><td colspan="2">0</td><td></td><td></td></tr>
<tr><td></td><td>STANDARD</td><td>0</td><td>0</td><td colspan="2">1</td><td></td><td></td></tr>
<tr><td></td><td>PATTERN1</td><td>0</td><td>1</td><td colspan="2">0</td><td></td><td></td></tr>
<tr><td></td><td>PATTERN2</td><td>0</td><td>1</td><td colspan="2">1</td><td></td><td></td></tr>
<tr><td>1</td><td>PATTERN3</td><td>1</td><td>0</td><td colspan="2">0</td><td>0</td><td></td></tr>
<tr><td>2</td><td>PATTERN4</td><td>1</td><td>0</td><td colspan="2">1</td><td>0</td><td></td></tr>
<tr><td>3</td><td>PATTERN5</td><td>1</td><td>1</td><td colspan="2">0</td><td>0</td><td></td></tr>
<tr><td>4</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>5</td><td>Caller ID function</td><td colspan="2">Yes</td><td colspan="3">No</td><td>0</td><td>OPTION</td></tr>
<tr><td>6</td><td>Caller ID detect during CI off</td><td colspan="2">All times</td><td colspan="3">Only first</td><td>0</td><td></td></tr>
<tr><td>7</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>8</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td rowspan="8">SW
I
D3</td><td>1</td><td rowspan="5">CI off detection timer (0-1550ms setting by 50ms step)</td><td colspan="5" rowspan="5">Binary input
No. = 16 8 4 2 1
1 2 3 4 5
0 1 1 1 0</td><td>0</td><td></td></tr>
<tr><td>2</td><td>1</td><td></td></tr>
<tr><td>3</td><td>1</td><td></td></tr>
<tr><td>4</td><td>1</td><td></td></tr>
<tr><td>5</td><td>0</td><td></td></tr>
<tr><td>6</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>7</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>8</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
</table>

<table>
<tr><th rowspan="2">SW NO.</th><th rowspan="2">DATA NO.</th><th rowspan="2">ITEM</th><th colspan="5">Switch setting and function</th><th rowspan="2">Initial setting</th><th rowspan="2">Remarks</th></tr>
<tr><th colspan="2">1</th><th colspan="3">0</th></tr>
<tr><td rowspan="8">SW
I
E1</td><td>1</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>2</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>3</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>4</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>5</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>6</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>7</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>8</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td rowspan="8">SW
I
E2</td><td>1</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>2</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>3</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>4</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>5</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>6</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>7</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>8</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td rowspan="8">SW
I
E3</td><td>1</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>2</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>3</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>4</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>5</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>6</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>7</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>8</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td rowspan="9">SW
I
F1</td><td></td><td rowspan="3">DTMF detection time</td><td></td><td>50ms</td><td>80ms</td><td>100ms</td><td>120ms</td><td></td><td rowspan="3"></td></tr>
<tr><td>1</td><td>No. 1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td></tr>
<tr><td>2</td><td>No. 2</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td></tr>
<tr><td>3</td><td>Protection of remote reception (5 ✱✱) detect</td><td colspan="2">Yes</td><td colspan="3">No</td><td>0</td><td>OPTION</td></tr>
<tr><td>4</td><td>Remote reception with GE telephone</td><td colspan="2">Compatible</td><td colspan="3">Not compatible</td><td>1</td><td></td></tr>
<tr><td>5</td><td rowspan="4">Remote operation code figure by external TEL (0~9)</td><td colspan="5">Binary input</td><td>0</td><td rowspan="4">OPTION</td></tr>
<tr><td>6</td><td colspan="5">No. = 8 4 2 1</td><td>1</td></tr>
<tr><td>7</td><td colspan="5">5 6 7 8</td><td>0</td></tr>
<tr><td>8</td><td colspan="5">0 1 0 1</td><td>1</td></tr>
<tr><td rowspan="10">SW
I
F2</td><td>1</td><td>CNG detection in STAND-BY mode</td><td colspan="2">Yes</td><td colspan="3">No</td><td>1</td><td>OPTION</td></tr>
<tr><td></td><td rowspan="3">Number of CNG detect (AM mode)</td><td></td><td>1pulse</td><td>2pulses</td><td>3pulses</td><td>4pulses</td><td></td><td rowspan="3"></td></tr>
<tr><td>2</td><td>No. 2</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td></tr>
<tr><td>3</td><td>No. 3</td><td>0</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td></td><td rowspan="3">Number of CNG detect (STAND-BY mode)</td><td></td><td>1pulse</td><td>2pulses</td><td>3pulses</td><td>4pulses</td><td></td><td rowspan="3"></td></tr>
<tr><td>4</td><td>No. 4</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td></tr>
<tr><td>5</td><td>No. 5</td><td>0</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>6</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>7</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>8</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td rowspan="8">SW
I
G1</td><td>1</td><td rowspan="4">Quiet detect time</td><td colspan="5">Binary input</td><td>0</td><td rowspan="4">OPTION</td></tr>
<tr><td>2</td><td colspan="5">No. = 8 4 2 1</td><td>1</td></tr>
<tr><td>3</td><td colspan="5">1 2 3 4</td><td>0</td></tr>
<tr><td>4</td><td colspan="5">0 1 0 0</td><td>0</td></tr>
<tr><td>5</td><td rowspan="4">Quiet detect start timing</td><td colspan="5">Binary input</td><td>0</td><td rowspan="4"></td></tr>
<tr><td>6</td><td colspan="5">No. = 8 4 2 1</td><td>1</td></tr>
<tr><td>7</td><td colspan="5">5 6 7 8</td><td>0</td></tr>
<tr><td>8</td><td colspan="5">0 1 0 1</td><td>1</td></tr>
</table>

SW NO.	DATA NO.	ITEM	Switch setting and function					Initial setting	Remarks
			1		0				
SW I G2	1	Reserved						0	
	2	Reserved						0	
	3	Reserved						0	
	4	Reserved						0	
	5	Reserved						0	
	6	Reserved						0	
	7	Reserved						0	
	8	Reserved						0	
SW I G3		OGM detect timer		Not work	100ms	200ms	300ms		
	1		No. 1	0	0	1	1	0	
	2		No. 2	0	1	0	1	1	
	3	Reserved						0	
	4	Reserved						0	
		Selection time of quiet detection		30s	40s	50s	60s		
	5		No. 5	0	0	1	1	0	
	6		No. 6	0	1	0	1	1	
	7	Choice after quiet detect	Wait response for 3sec		Normal FAX RX			1	
	8	Reserved						0	
SW I H1		Busy tone detection ON/OFF time (Lower duration)		150ms	200ms	250ms	350ms		
	1		No. 1	0	0	1	1	0	
	2		No. 2	0	1	0	1	1	
		Busy tone detection ON/OFF time (Upper duration)		650ms	900ms	1500ms	2700ms		
	3		No. 3	0	0	1	1	0	
	4		No. 4	0	1	0	1	1	
	5	Reserved						0	
	6	Busy tone detect continuation sound detect (during ICM: for internal A.M.)	No		Yes			0	
	7	Reserved						0	
	8	Busy tone detect intermittent sound detect (during ICM: for internal A.M.)	No		Yes			0	
SW I H2		Busy tone detection pulse number		2pulses	4pulses	6pulses	10pulses		
	1		No. 1	0	0	1	1	0	
	2		No. 2	0	1	0	1	1	
	3	Fax switching when A.M. full	Yes		No			0	OPTION
	4	Reserved						0	
	5	Reserved						0	
	6	Reserved						0	
	7	Reserved						0	
	8	Busy tone continuous sound detect time	5s		10s			1	
SW I I1	1	Reserved						0	
	2	Reserved						0	
	3	Reserved						0	
	4	Reserved						0	
	5	Reserved						0	
	6	Reserved						0	
	7	Reserved						0	
	8	Reserved						0	
SW I I2	1	Reserved						0	
	2	Reserved						0	
	3	Reserved						0	
	4	Reserved						0	
	5	Reserved						0	
	6	Reserved						0	
	7	Reserved						0	
	8	Reserved						0	

<table>
<tr><th rowspan="2">SW NO.</th><th rowspan="2">DATA NO.</th><th rowspan="2">ITEM</th><th colspan="5">Switch setting and function</th><th rowspan="2">Initial setting</th><th rowspan="2">Remarks</th></tr>
<tr><th colspan="2">1</th><th colspan="3">0</th></tr>
<tr><td rowspan="8">SW I I3</td><td>1</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>2</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>3</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>4</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>5</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>6</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>7</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>8</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td rowspan="8">SW I I4</td><td>1</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>2</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>3</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>4</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>5</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>6</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>7</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>8</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td rowspan="8">SW I I5</td><td>1</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>2</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>3</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>4</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>5</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>6</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>7</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>8</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td rowspan="8">SW I I6</td><td>1</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>2</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>3</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>4</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>5</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>6</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>7</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>8</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td rowspan="8">SW I I7</td><td>1</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>2</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>3</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>4</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>5</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>6</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>7</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>8</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td rowspan="9">SW I J1</td><td>1</td><td>Activity report print</td><td colspan="2">Automatic printout</td><td colspan="3">No printout when memory full</td><td>0</td><td>OPTION</td></tr>
<tr><td>2</td><td>Total communication hours and pages print</td><td colspan="2">No</td><td colspan="3">Yes</td><td>0</td><td></td></tr>
<tr><td>3</td><td>Sender’s phone number setting</td><td colspan="2">Cannot change</td><td colspan="3">Change allowed</td><td>0</td><td></td></tr>
<tr><td>4</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>5</td><td>Reserved</td><td colspan="2"></td><td colspan="3"></td><td>0</td><td></td></tr>
<tr><td>6</td><td>Summer time setting</td><td colspan="2">No</td><td colspan="3">Yes</td><td>1</td><td>OPTION</td></tr>
<tr><td></td><td rowspan="3">Ringer volume</td><td></td><td>Off</td><td>Low</td><td>Middle</td><td>High</td><td></td><td rowspan="3">OPTION</td></tr>
<tr><td>7</td><td>No. 7</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>8</td><td>No. 8</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td></tr>
</table>

SW NO.	DATA NO.	ITEM	Switch setting and function						Initial setting	Remarks
			1		0					
SW I J2		Speaker volume (3 stages)		Low	Low	Middle	High			OPTION
	1		No. 1	0	0	1	1		1	
	2		No. 2	0	1	0	1		0	
	3	Polling key	Yes		No				0	OPTION
		Handset receiver volume		Low	Low	Middle	High			OPTION
	4		No. 4	0	0	1	1		1	
	5		No. 5	0	1	0	1		0	
	6	Reserved							0	
	7	Reserved							0	
	8	Reserved							0	
SW I J3	1	Automatic cover sheet	Yes		No				0	OPTION
		Communication results printout (Transaction report)		E/T/M	Send only	Always	No print	Err only		OPTION
	2		No. 2	0	0	0	0	1	1	
	3		No. 3	0	0	1	1	0	0	
	4		No. 4	0	1	0	1	0	0	
	5	Reserved							0	
	6	Reserved							0	
	7	Reserved							0	
	8	Reserved							0	
SW I K1	1	Entering DIAG mode by pressing SPEED key	Yes		No				0	
	2	Reserved							0	
	3	Reserved							0	
	4	Reserved							0	
	5	Reserved							0	
	6	Reserved							0	
	7	Reserved							0	
	8	Reserved							0	
SW I L1	1	Reserved							0	
	2	Reserved							0	
	3	Reserved							0	
	4	Reserved							0	
	5	Cut off mode (COPY mode)	Yes		No				1	OPTION
	6	A4 paper enable	Enable		Disable				0	
	7	LEGAL & LETTER paper enable	Enable		Disable				1	
	8	2 IN 1 Mode	Yes		No				0	OPTION
SW I L2		Paper set size		LETTER	LEGAL	A4				OPTION
	1		No. 1	0	0	1			0	
	2		No. 2	0	1	0			0	
	3	Automatic reduce of receive	Auto		100 %				1	OPTION
	4	Print contrast	Light		Normal				0	OPTION
	5	Reception reduction ratio in case of memory full	100 %		93 %				0	OPTION
	6	Reserved							0	
	7	Reserved							0	
	8	Reserved							0	
SW I M1	1	Reserved							0	
	2	Reserved							0	
	3	Reserved							0	
	4	Reserved							0	
	5	Reserved							0	
	6	Reserved							0	
	7	Reserved							0	
	8	Reserved							0	

SW NO.	DATA NO.	ITEM	Switch setting and function: 1	Switch setting and function: 0	Initial setting	Remarks
SW-M2	1	Reserved			0	
	2	Reserved			0	
	3	Reserved			0	
	4	Reserved			0	
	5	Reserved			0	
	6	Reserved			0	
	7	Reserved			0	
	8	Reserved			0	
SW-N1	1	LCR short time	Binary input		0	OPTION
	2		No. = 32 16 8 4 2 1		0	
	3		1 2 3 4 5 6		0	
	4		0 0 0 0 1 0		0	
	5				1	
	6				0	
	7	Reserved			0	
	8	Reserved			0	
SW-N2	1	LCR long time	Binary input		0	OPTION
	2		No. = 32 16 8 4 2 1		0	
	3		1 2 3 4 5 6		0	
	4		0 0 0 1 0 0		1	
	5				0	
	6				0	
	7	Reserved			0	
	8	Reserved			0	
SW-N3	1	LCR Time Select	Long	Short	0	OPTION
	2	Temporary release of caller ID withhold	Yes	No	1	
	3	Connect Japanese center	Connect Japanese center	Connect USA center	0	
	4	Open LCR debug mode	Open LCR debug mode ON	Open LCR debug mode OFF	0	
		Digital equalization setting (Reception for LCR V23 mode)	0km / 0km / 7.2km / 7.2km			
	5		No. 5: 0 / 0 / 1 / 1		0	
	6		No. 6: 0 / 1 / 0 / 1		0	
	7	Reserved			0	
	8	Reserved			0	

• Soft switch function description

SW-A1 No. 1 Protect from echo

Used to protect from echo in reception.

SW-A1 No. 2 Forced 4800BPS reception

When line conditions warrant that receptions take place at 4800BPS repeatedly.

It may improve the success of receptions by setting at 4800BPS.

This improves the receiving document quality and reduces handshake time due to fallback during training.

SW-A1 No. 3 Footer print

When set to "1", the date of reception, the sender machine No., and the page No. are automatically recorded at the end of reception.

SW-A1 No. 4 Length limitation of copy/send/receive

Used to set the maximum page length.

To avoid possible paper jam, the page length is normally limited to 1 meter for copy or transmit, and 1.5 meters for receive.

It is possible to set it to "No limit" to transmit a long document, such as a computer print form, etc. (In this case, the receiver must also be set to no limit.)

SW-A1 No. 5 CSI transmission

(CSI TRANSMISSION) is a switch to set whether the machine sends or does not send the signal (CSI signal) informing its own telephone No. to the remote fax machine when information is received. When "nonsending" is set, the telephone No. is not output on the remote transmitting machine if the remote transmitting machine has the function to display or print the telephone No. of receiving machine, using this CSI signal.

SW-A1 No. 6 DIS receive acknowledgment during G3 transmission

Used to make a choice of whether reception of DIS (NSF) is acknowledged after receiving two DISs (NSFs) or receiving one DIS (two NSFs). It may be useful for overseas communication to avoid an echo suppression problem, if set to 1.

SW-A1 No. 7 Non-modulated carrier for V29 transmission modem

Though transmission of a non-modulated carrier is not required for transmission by the V29 modem according to the CCITT recommendation, it may be permitted to a send non-modulated carrier before the image signal to avoid an echo suppression problem. It may be useful for overseas communication to avoid an echo suppression problem, if set to 1.

SW-A1 No. 8 EOL (End Of Line) detect timer

Used to make a choice of whether to use the 25-second or 13-second timer for detection of EOL.
This is effective to override communication failures with some facsimile models that have longer EOL detection.

SW-A2 No. 1 ~ No. 4 Modem speed

Used to set the initial modem speed. The default is 9600BPS.
It may be necessary to program it to a slower speed when frequent line fallback is encountered, in order to save the time required for fallback procedure.

SW-A2 No. 5 Sender's information transmit

(SENDER'S INFORMATION TRANSMISSION) is a switch to set the function to print the content of HEADER PRINT described in the passcode list at the front end of receiver's original when original is sent to the remote machine.

If this switch is set to "NO", the HEADER PRINT is not output at the receiving machine.

SW-A2 No. 6 Reserved

Set to "0".

SW-A2 No. 7 Communication error treatment in RTN sending mode (Reception)

Used to determine communication error treatment when RTN is sent by occurrence of a received image error in G3 reception. When it is set to "1", communication error is judged as no error.

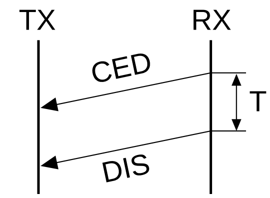
SW-A2 No. 8 CNG transmission

When set to "0" , this model allows CNG transmission by pressing the Start key in the key pad dialing mode. When set to "1", CNG transmission in the key pad dialing mode cannot be performed. In either case. CNG transmission can be performed in the auto dial mode.

SW-A3 No. 1, No. 2 CED tone signal interval

For international communication, the 2100Hz CED tone may act as an echo suppression switch, causing a communication problem.

Though SW-A3 No. 1 and No. 2 are normally set to 0, this selfing is used to change the time between the CED tone signal to eliminate the communication caused by echo.



SW-A3 No. 3 MR Coding

MR Coding is enable.

SW-A3 No. 4 ECM mode

Used to determine ECM mode function. Refer to following table.

SW-A3 No.4 ECM MODE		0	0	1	1
SW-A3 No.5 ECM MMR MODE		0	1	0	1
Compression method	ECM MMR mode	Yes	No	No	No
	ECM MH mode	Yes	Yes	No	No
	MR Mode	Yes	Yes	Yes	Yes

(Depending on remote machine)

SW-A3 No. 5 ECM MMR mode

See SW-A3 No. 4.

SW-A3 No. 6 ~ No. 8 Reserved

Set to "0".

SW-A4 No. 1 ~ No. 5 Signal transmission level

Used to control the signal transmission level in the range of-0dB to-31dB.

SW-A4 No. 6 Protocol monitor (Error print)

If set to "1", protocol is printed at communication error.

SW-A4 No. 7 Protocol monitor

Normally set to "0". If set to "1", communication can be checked, in case of trouble, without using a G3 tester or other tools.
When communication FSK data transmission or reception is made, the data is taken into the buffer. When communication is finished, the data is analysed and printed out. When data is received with the line monitor (SW-A4 No. 8) set to "1" the reception level is also printed out.

SW-A4 No. 8 Line monitor

Normally set to "0". If set to "1", the transmission speed and the reception level are displayed on the LCD. Used for line tests.

SW-A5 No. 1, No. 2 Digital line equalization setting (Reception)

Line equalization when reception is to be set according to the line characteristics.

Setting should be made according to distance between the telephone and the telephone company central switching station.

SW-A5 No. 3, No. 4 Digital line equalization setting (Transmission)

Line equalization when transmitter is to be set according to the line characteristics.
Setting should be made according to distance between the telephone and the telephone company central switching station.

SW-A5 No. 5, No. 6 Digital cable equalizer setting (Reception for Caller ID)

Line equalization when reception for CALLER ID is to be set according to the line characteristics.
Setting should be made according to distance between the telephone and the telephone company central switching station.

SW-A5 No. 7 Error criterion

Used to select error criterion for sending back RTN when receiving image data.

SW-A5 No. 8 Anti junk fax check

When using the Anti junk fax function, set to "1".

SW-A6 No. 1 Auto gain control (MODEM)

When this mode is enabled, if the reception signal level is under 31dBm, the modem itself controls the signal gain automatically.

SW-A6 No. 2 End buzzer

Setting this bit to 0 will disable the end buzzer (including the error buzzer/ on-hook buzzer).

SW-A6 No. 3 Disconnect the line when DIS is received in RX mode

Bit1= 0: When DIS signal is received during RX mode, the line is disconnected immediately.

Bit1= 1: When DIS signal is received during RX mode, the line is disconnected on the next tone.

SW-A6 No. 4 Equalizer freeze control (MODEM)

This switch is used to perform reception operation by fixing the equalizer control of modem for the line which is always in an unfavorable state and picture cannot be received.

* Usually, the control is executed according to the state of line where the equalizer setting is changed always.

SW-A6 No. 5 Equalizer freeze control 7200BPS only

Setting which specifies SW-A3 No. 6 control only in the condition of 7200BPS modem speed.

SW-A6 No. 6 CNG transmission in manual TX mode

When set to "1", fax transmit the CNG signal in case of manual transmission mode (User press the START key after waiting for the fax answering signal from handset or speaker).

SW-A6 No. 7 Reserved

Set to "0".

SW-A6 No. 8 Modem speed automatic fallback when RX level is under -40dBm

When set to "1", if fax signal level is under -40dBm during reception, machine selects the slower modem speed automatically.
It is effective when noises occur on the received document due to the long distance communications.

SW-B1 No. 1 ~ No. 4 Recall interval

Choice is made for a redial interval for speed and rapid dial calls.
Use a binary number to program this. If set to 0 accidentally, 1 will be assumed.

SW-B1 No. 5 ~ No. 8 Recall times

Choice is made as to how many redials there should be.

SW-B2 No. 1 Dialing pause (sec/pause)

Pauses can be inserted between telephone numbers of direct dial connection. Selection of 4 sec or 2 sec pause is available.

SW-B2 No. 2 Dial tone detection (before auto dial)

Used to set YES/NO of dial tone detection in auto dialing.

SW-B2 No. 3 Reserved

Set to "0".

SW-B2 No. 4 Busy tone detection (after auto dial)

Used to set busy tone detection in auto dialing.

SW-B2 No. 5, No. 6 Waiting time after dialing

This is time waiting for the opponent's signals after dialing.

SW-B2 No. 7, No. 8 Reserved

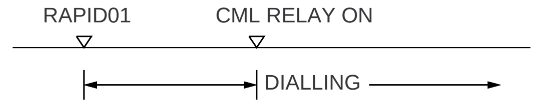
Set to "0".

SW-B3 No. 1 ~ No. 5 Reserved

Set to "0".

SW-B3 No. 6, No. 7 Auto dial mode Delay timer of before line connect

Delay time between the dial key input and line connection under the auto dial mode.



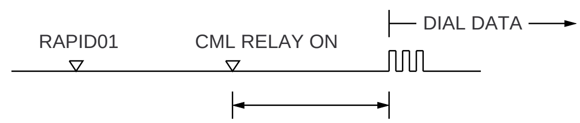
No.6	No.7	
0	0	0sec
0	1	1.5sec
1	0	3.0sec
1	1	4.5sec

SW-B3 No. 8 Hold key

Used to set YES/NO of holding function by the HOLD key.

SW-B4 No. 1, No. 2 Auto dial mode Delay timer of after line connect

Delay time between the line connection and dial data output under the auto dial mode.



No.1	No.2	
0	0	1.7sec
0	1	3.0sec
1	0	3.6sec
1	1	4.0sec

SW-B4 No. 3 Dial mode

When using the pulse dial, set to 1. When using the tone dial, set to 0.

SW-B4 No. 4 Pulse → Tone change function by ⋊ key

When setting to 1, the mode is changed by pressing the ⋊ key from the pulse dial mode to the tone dial mode.

SW-B4 No. 5 Dial pulse make/break ratio (%)

When using the 33% make ratio pulse dial, set to "0".
When using the 40% make ratio pulse dial, set to "1".

SW-B4 No. 6, No. 7 Reserved

Set to "0".

SW-B4 No. 8 Recalling fixed only one time when dialing was unsuccessful without detecting busy tone signal

When dialing results in failure since the busy tone cannot be detected, recalling is fixed to one time.

Supplementary explanation
If time-out termination is made when dialing, only single recall is possible even if the setting time of recalls (SW-B1 No. 5 - No. 8) has been set to some times. This soft switch is added in order to meet FCC.

SW-B5 No. 1 ~ No. 5 DTMF signal transmission level (Low)

The transmission level of DTMF signal is adjusted. (lower frequency)

00000: 0dBm

↓

11111: -15.5dBm (-0.5dBm x 31)

SW-B5 No. 6 ~ No. 8 Reserved

Set to "0".

SW-B6 No. 1 ~ No. 5 DTMF signal transmission level (High)

The transmission level of DTMF signal is adjusted. (higher frequency)

00000: 0dBm

↓

11111: -15.5 dBm (-0.5dBm x 31)

SW-B6 No. 6 Dial tone detection (LCR center call)

Used to set YES/NO of dial tone detection (calling LCR center).

SW-B6 No. 7, No. 8 Reserved

Set to "0".

SW-C1 No. 1, No. 2 Reading slice (Binary)

Used to determine the set value of reading density in standard/fine mode. The standard setting is "00" (Factory setting is "00")

SW-C1 No. 3, No. 4 Reading slice (Half tone)

Used to determine the set value of reading density in half tone mode. The standard setting is "00" (Factory setting is "00")

SW-C1 No. 5 Line density selection

Used to set the transmission mode which is automatically selected when the Resolution key is not pressed. In the copy mode, however, the fine mode is automatically selected unless the Resolution key is manually set to another mode.

SW-C1 No. 6 Reserved

Set to "0".

SW-C1 No. 7 MTF correction in half tone mode

This allows selection of MTF correction (dimness correction) in the half tone mode.
When "NO" (=1) is selected, the whole image becomes soft and mild. Clearness of characters will be reduced. Normally set to "YES" (=0).

SW-C1 No. 8 Reserved

Set to "0".

SW-D1 No. 1 ~ No. 4 Number of rings for auto receive

When the machine is set in the auto receive mode, the number of rings before answering can be selected. It may be set from one to four rings using a binary number. Since the facsimile telephone could be used as an ordinary telephone if the handset is taken off the hook, it should be programmed to the user's choice. If the soft switch was set to 1, direct connection is made to the facsimile. If a facsimile calling beep was heard when the handset is taken off the hook, press the START key and put the handset on the hook to have the facsimile start receiving. If it was set to 0 accidentally, receive ring is set to 1.

NOTE: If the machine is set to answer after a large number of rings, it may not be able to receive faxes successfully. If you have difficulty receiving faxes, reduce the number of rings to a maximum of 6.

SW-D1 No. 5 Automatic switching manual to auto receive mode

This soft switch is used to select whether the machine should switch to the auto receive mode after 5 rings in the manual receive mode or remain in the same way as SW-D1 No. 1, No. 2, No. 3 and No. 4 "0"1"0"1"(5 rings).

SW-D1 No. 6 Reserved

Set to "0".

SW-D1 No. 7, No. 8 CI detect frequency

Detection frequency of ring signal for auto reception is set.
When set to No. 6=0, No. 7=0, frequency is set to PTT recommendation.
When set to No. 6=0, No. 7=1, frequency is set to 11.5Hz or more.
When set to No. 6=1, No. 7=0, frequency is set to 13.0Hz or more.
When set to No. 6=1, No. 7=1, frequency is set to 20.0Hz or more.

SW-D2 No. 1 ~ No. 3 Distinctive ringing setting (PATTERN 4 and 5 are for CANADA only)

This function allows reception of services offered by USA and Canada telephone companies in which the customer contracts with the telephone company to have up to 4 telephone numbers (USA) or 6 telephone numbers (Canada) established for one line.
Each telephone number is signalled by a different ringing pattern, and the customer can allocate each number to a specific use.

<Example of use>

	Phone Number	Intended Purpose	Ring Pattern
Ring Pattern	555-1234	Voice Calls	Standard
	555-1235	Facsimile Calls	Pattern 1
	555-1236	Answering Machine	Pattern 2
	555-1237	PC Modem	Pattern 3

<Distinctive Ringing Timing Specifications>

1) USA

DISTINCTIVE RING → 1:RING PATTERN 1 → 2:RING PATTERN 2
↑ ↓
5:OFF SETTING ← 4:STANDARD RING ← 3:RING PATTERN 3

2) Canada

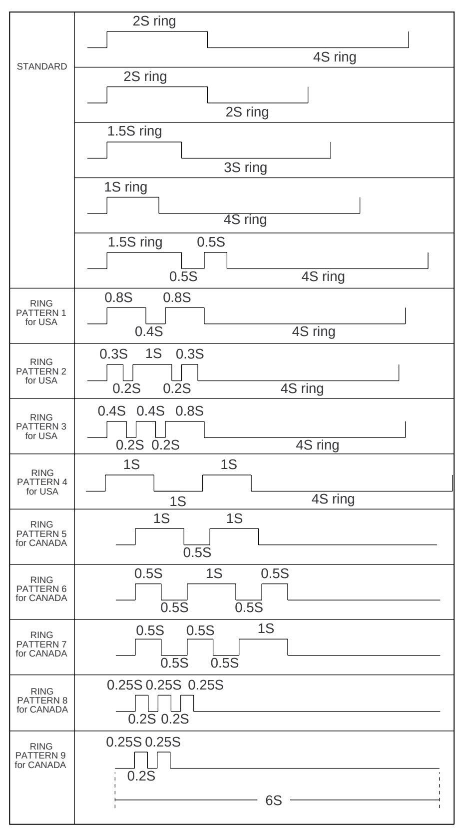
DISTINCTIVE RING → 1:RING PATTERN 1 → 2:RING PATTERN 2
↑ ↓
7:OFF SETTING 3:RING PATTERN 3
↑ ↓
6:STANDARD RING ← 5:RING PATTERN 5 ← 4:RING PATTERN 4

- Ring Pattern

STANDARD has 5 ring patterns, and DISTINCTIVE has 9 patterns.
Ring patterns ①~④ for USA, and ⑤~⑨ for Canada.
However, to make the setting procedure as easy as possible for the user to understand these patterns are grouped as follows:

<Optional Setting>

Optional Setting	Ring pattern	Country
1) RING PATTERN 1	RING PATTERN ①	for USA
	RING PATTERN ④	for USA
	RING PATTERN ⑤	for Canada
2) RING PATTERN 2	RING PATTERN ②	for USA
	RING PATTERN ⑥	for Canada
3) RING PATTERN 3	RING PATTERN ③	for USA
	RING PATTERN ⑦	for Canada
4) RING PATTERN 4	RING PATTERN ⑧	for Canada
5) RING PATTERN 5	RING PATTERN ⑨	for Canada
6) STANDARD RING		
7) OFF SETTING		



SW-D2 No. 4 Reserved

Set to "0".

SW-D2 No. 5 Caller ID function

Used for Caller ID function.

SW-D2 No. 6 Caller ID detect during CI off

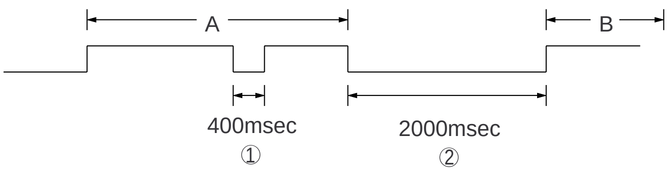
Detection of caller ID signal is performed as follows:
0:First CI OFF only
1:All of CI OFF

SW-D2 No. 7, No. 8 Reserved

Set to "0".

SW-D3 No. 1 ~ No. 5 CI off detection timer (0-1550ms setting by 50ms step)

Set the minimum time period of CI signal interruption which affords to be judged as a CI OFF section with 50ms steps.
(Example)



01110 (50ms ~ 14):
700ms (CI interruption>700ms:Judged as a CI OFF section)
The section 1 is not judged as a CI OFF section, the CI signal A is counted as one signal.
The section 2 is judged as a CI OFF section, the CI signal B is considered as the second signal.

00111 (50ms ~ 7):
350ms (CI interruption>350ms:Judged as a CI OFF section)
The section 1 is judged as a CI OFF section, and the CI signal A is counted as two signals.
The section 2 is judged as a CI OFF section, and the CI signal B is considered as the third signal.

SW-D3 No. 6 ~ No. 8 Reserved

Set to "0".

SW-E1 No. 1 ~ No. 8 Reserved

Set to "0".

SW-E2 No. 1 ~ No. 8 Reserved

Set to "0".

SW-E3 No. 1 ~ No. 8 Reserved

Set to "0".

SW-F1 No. 1, No. 2 DTMF detect time

Used to set detect time of DTMF (Dual Tone Multi Frequency) used in remote reception (5 ⋇⋇).

The longer the detect time is, the less the error detection is caused by noises.

SW-F1 No. 3 Protection of remote reception (5 ⋇⋇) detect

Used to set the function of remote reception (5 ⋇⋇). When set to "1", the remote reception function is disabled.

SW-F1 No. 4 Remote reception with GE telephone

(Corresponding to TEL made by GE) P. B. X.

"1": Compatible with TEL mode by GE

"0": Not compatible

- When sending (5 ⋇⋇) for remote reception with a GE manufactured telephone remote reception may not take place because of special specifications in their DTMF.
  To overcome this, a soft SW is provided to change the modem setting to allow for remote reception.
- If this soft SW is set to "1", other telephone sets may be adversely affected.

SW-F1 No. 5 ~ No. 8 Remote operation code figure by external TEL (0 ~ 9)

Remote operation codes can be changed from 0 through 9. If set to greater than 9, it defaults to 9. The "5 ⋇⋇" is not changed.
Ex-7 ⋇⋇ (Default: 5 ⋇⋇)

SW-F2 No. 1 CNG detection in STAND-BY mode

When setting to "1", the CNG signal detection function during standby stops.

SW-F2 No. 2, No. 3 Number of CNG detect (AM mode)

Used for detection of CNG in 1 to 4 pulses.

SW-F2 No. 4, No. 5 Number of CNG detect (STAND-BY mode)

Used for detection of CNG in 1 to 4 pulses.

SW-F2 No. 6 ~ No. 8 Reserved

Set to "0".

SW-G1 No. 1 ~ No. 4 Quiet detect time

When an answering machine is connected, if a no sound state is detected for a certain period of time, the machine judges it as a transmission from a facsimile machine and automatically switches to the FAX mode.

SW-G1 No. 5 ~ No. 8 Quiet detect start timing

Inserts a pause before commencing quiet detection.

SW-G2 No. 1 ~ No. 8 Reserved

Set to "0".

SW-G3 No. 1, No. 2 OGM detect timer

This is used to change the OGM detection time for answering machine hook up detection.

SW-G3 No. 3, No. 4 Reserved

Set to "0".

SW-G3 No. 5, No. 6 Selection time of quiet detection

The switch which sets the time from the start of detection function to the end of the function.

SW-G3 No. 7 Choice after quiet detect

"0": The reception begins when no sound is detected in A.M. mode.

"1": The DIS signal is transmitted only once when no sound is detected in A.M. mode.

SW-G3 No. 8 Reserved

Set to "0".

SW-H1 No. 1, No. 2 Busy tone detection ON/OFF time (Lower duration)

The initial value of detection is set according to electric condition.

The set value is changed according to the local switch board. (Erroneous detection of sound is reduced.)

Normally the upper limit is set to 900msec, and the lower limit to 200msec.

If erroneous detection is caused by sound, etc., adjust the detection range.

The lower limit can be set in the range of 350msec to 150msec.

SW-H1 No. 3, No. 4 Busy tone detection ON/OFF time (Upper duration)

Similarly to SW-H1 No. 1, the set value can be varied.

The upper limit can be set in the range of 650msec to 2700msec.

SW-H1 No. 1	SW-H1 No. 2	SW-H1 No. 3	SW-H1 No. 4	Detection range
0	0	0	0	150msec ~ 650msec
0	0	0	1	150msec ~ 900msec
0	0	1	0	150msec ~ 1500msec
0	0	1	1	150msec ~ 2700msec
0	1	0	0	200msec ~ 650msec
0	1	0	1	200msec ~ 900msec
0	1	1	0	200msec ~ 1500msec
0	1	1	1	200msec ~ 2700msec
1	0	0	0	250msec ~ 650msec
1	0	0	1	250msec ~ 900msec
1	0	1	0	250msec ~ 1500msec
1	0	1	1	250msec ~ 2700msec
1	1	0	0	350msec ~ 650msec
1	1	0	1	350msec ~ 900msec
1	1	1	0	350msec ~ 1500msec
1	1	1	1	350msec ~ 2700msec

SW-H1 No. 5 Reserved

Set to "0".

SW-H1 No. 6 Busy tone detect continuation sound detect (during ICM: for internal A.M.)

Used to select detection of the continuous sound of certain frequency.

SW-H1 No. 7 Reserved

Set to "0".

SW-H1 No. 8 Busy tone detect intermittent sound detect (during ICM: for internal A.M.)

Used to select detection of the intermittent sound of certain frequency.

SW-H2 No. 1, No. 2 Busy tone detection pulse number

Used to set detection of Busy tone intermittent sounds.

SW-H2 No. 3 Fax switching when A.M. full

If the answering machine's memory (tape) is full and there is no response, the machine automatically switches to Fax reception.

SW-H2 No. 4 ~ No. 7 Reserved

Set to "0".

SW-H2 No. 8 Busy tone continuous sound detect time

Set detecting time busy tone continuous sound for 5 or 10 seconds.

SW-I1 No. 1 ~ No. 8 Reserved

Set to "0".

SW-I2 No. 1 ~ No. 8 Reserved

Set to "0".

SW-I3 No. 1 ~ No. 8 Reserved

Set to "0".

SW-I4 No. 1 ~ No. 8 Reserved

Set to "0".

SW-I5 No. 1 ~ No. 8 Reserved

Set to "0".

SW-I6 No. 1 ~ No. 8 Reserved

Set to "0".

SW-I7 No. 1 ~ No. 8 Reserved

Set to "0".

SW-J1 No. 1 Activity report print

This soft switch is used to select: whether or not to print out the activity report when the memory is full. An activity report can be printed when the following key entry command is made.

"FUNCTION", "2", "#", "START"

After producing the activity report, all the data in the memory will be cleared.

When the switch function is set to "0" (no), the data in the memory will be deleted from the oldest as it reaches the maximum memory capacity.

SW-J1 No. 2 Total communication hours and pages print

Used to make a choice of whether the total communication time and pages are recorded in the activity report.

SW-J1 No. 3 Sender's phone number setting

Used to make a choice of whether the registered sender's phone number can be changed or not. If the switch is set to "1", new registration of the sender's phone number is disabled to prevent accidental wrong input.

SW-J1 No. 4, No. 5 Reserved

Set to "0".

SW-J1 No. 6 Summer time setting

This is used to set YES/NO of automatic clock adjustment for European Summer time.

SW-J1 No. 7, No. 8 Ringer volume

Used to adjust ringing volume.

SW-J2 No. 1, No. 2 Speaker volume (3 stages)

Used to adjust sound volume from a speaker.

SW-J2 No. 3 Polling key

If this switch is set to 1, the last of Rapid key works as polling key.

SW-J2 No. 4, No. 5 Handset receiver volume

Used to adjust sound volume from a handset receiver volume.

SW-J2 No. 6 ~ No. 8 Reserved

Set to "0".

SW-J3 No. 1 Automatic cover sheet

The machine automatically generates a cover sheet and sends it as the last page of each transmission.

SW-J3 No. 2 ~ No. 4 Communication result printout (Transaction report)

Every communication, the result can be output. As usual, it is set to print the timer sending communication error alone. If No. 2: 0 No. 3: 1 No. 4: 0 are set, printing is always on (printed even if it is normally ended).

- 000: Error, timer and memory sending/receiving
- 001: Sending
- 010: Continuous printing
- 011: Not printed
- 100: Communication error

SW-J3 No. 5 ~ No. 8 Reserved

Set to "0".

SW-K1 No. 1 Entering DIAG mode by pressing SPEED key

A bit which is used in the production process only. When the SPEED key is pressed, the switch is changed from the stand-by state to the DIAG mode.

SW-K1 No. 2 ~ No. 8 Reserved

Set to "0".

SW-L1 No. 1 ~ No. 4 Reserved

Set to "0".

SW-L1 No. 5 Cut off mode (COPY mode)

Whether the excessive part is printed on the next recording paper or discarded is selected to copy a document which is longer than the recording paper.

SW-L1 No. 6 A4 Paper enable

The use of recording paper of A4 is enabled.

SW-L1 No. 7 LEGAL and LETTER paper enable

The use of recording paper of LEGAL and LETTER is enabled.

SW-L1 No. 8 2 IN 1 mode

A function to print transmitted data of two pages on one sheet.

SW-L2 No. 1, No. 2 Paper set size

At present size of the recording paper.

SW-L2 No. 3 Automatic reduce of receive

If set to 1, it is reduced automatically when receiving.

SW-L2 No. 4 Print contrast

0: Normal
1: Light

SW-L2 No. 5 Reception reduction ratio in case of memory full

This model is designed so that the print is started according to the setting of SW-L2 No.3 when reception of one page is completed. However, if the memory is filled with data before completion of reception of one page, the print is started with the reduction ratio which is set with this switch.

SW-L2 No. 6 ~ No. 8 Reserved

Set to "0".

SW-M1 No. 1 ~ No. 8 Reserved

Set to "0".

SW-M2 No. 1 ~ No. 8 Reserved

Set to "0".

SW-N1 No. 1 ~ No. 6 LCR short time

First time setting transmitting to the Open LCR center.

SW-N1 No. 7, No. 8 Reserved

Set to "0".

SW-N2 No. 1 ~ No. 6 LCR long time

Second time setting transmitting to the Open LCR center.

SW-N2 No. 7, No. 8 Reserved

Set to "0".

SW-N3 No. 1 LCR Time Select

Used to select LCR short time or LCR long time.

0:LCR short time is selected.
1:LCR long time is selected.

SW-N3 No. 2 Temporary release of caller ID withhold

Used to do temporary release of caller ID withhold.

0:Normal dialing.
1:Release of caller ID withhold before dialing.

SW-N3 No. 3 Connect Japanese center

Used to connect Japanese open LCR center.

0:Connect USA open LCR center.
1:Connect Japanese open LCR center.

SW-N3 No. 4 Open LCR debug mode

Used to debug open LCR function.

0:Normal mode.
1:debug mode.

SW-N3 No. 5, No. 6 Digital egualization setting (Recept for LCR V23 mode)

Line egualization when Open LCR table download is to be set according to the line characteristics.
Setting should be made according to distance between the telephone and the telephone company central switching station.

SW-N3 No. 7, No. 8 Reserved

Set to "0".

[3] Troubleshooting

Refer to the following actions to troubleshoot any of the problems mentioned in 1-4.

[1] A communication error occurs.

[2] Image distortion produced.

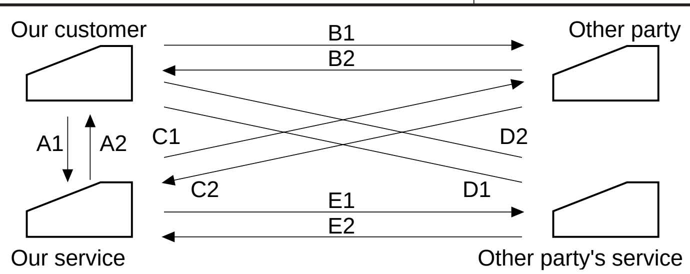
[3] Unable to do overseas communication.

[4] Communication speed slow due to FALLBACK.

- Increase the transmission level SOFT SWITCH A4-1, 2, 3, 4, 5. May be used in case [1] [2] [3].
- Decrease the transmission level SOFT SWITCH A4-1, 2, 3, 4, 5. May be used in case [3].
- Apply line equalization SOFT SWITCH A5-1, 2. May be used in case [1] [2] [3] [4].
- Slow down the transmission speed SOFT SWITCH A2-1, 2, 3, 4. May be used in case [2] [3].
- Replace the TEL/LIU PWB. May be used in all cases.
- Replace the control PWB. May be used in all cases.

* If transmission problems still exist on the machine, use the following format and check the related matters.

TO:	ATT:	Ref.No. :
CC:	ATT:	Date :
FM:		Dept :
		Sign :

***** Facsimile communication problem *****			Ref.No.:
From: Mr.	Fax Tel No.:		Date:
Our customer	Name		Tel No.
	Address		Fax No.
	Contact person		Model name
Other party	Name		Tel No.
	Address		Fax No.
	Contact person		Model name
Problem mode	Line: Domestic / international	Model: G3	Phase: A, B, C, D.
	Reception / Transmission	Automatic reception / Manual reception	
		Automatic dialing / Manual dialing / Others	
Frequency: %	ROM version:		
Confirmation item			Please mark problem with an X. No problem is: 0.
Comment			
Countermeasure			
**** Please attach the G3 data and activity report on problem. ****			

A1	A2	B1	B2	C1	C2	D1	D2	E1	E2

Transmission level setting is (   ) dB at our customer

Transmission level (   ) dBm
Reception level (   ) dBm
By level meter at B1 and B2

* Please complete this report before calling the “TAC” hotline if problem still occurs.

[4] Error code table

1. Communication error code table

G3 Transmission

Code	Final received signal	Error Condition (Receiver side)
0	Incomplete signal frame	Cannot recognize bit stream after flag
1	NSF, DIS	Cannot recognize DCS signal by echo etc. Cannot recognize NSS signal (FIF code etc)
2	CFR	Disconnects line during reception (carrier missing etc)
3	FTT	Disconnects line by fall back
4	MCF	Disconnects line during reception of multi page Cannot recognize NSS, DCS signal in the case of mode change
5	PIP or PIN	The line is hung up without replying to telephone request from the receiving party.
6	RTN or RTP	Cannot recognize NSS, DCS signal after transmit RTN or RTP signal.
7	No signal or DCN	No response in receiver side or DCN signal received* (transmitter side)
8	–	Owing to error in some page the error could not be corrected although the specified number of error retransmissions were attempted.
11	–	Error occurred after or while reception by the remote (receiving) machine was revealed to be impossible.
12	–	Error occurred just after fallback.
13	–	Error occurred after a response to retransmission end command was received.

G3 Reception

Code	Final received signal	Error Condition (Receiver side)
0	Incomplete signal frame	Cannot recognize bit stream after flag
1	NSS, DCS	Cannot recognize CFR or FTT signal Disconnects line during transmission (line error)
2	NSC, DTC	Cannot recognize NSS signal (FIF code etc)
3	EOP	Cannot recognize MCF, PIP, PIN, RTN, RTP signal
4	EOM	Cannot recognize MCF, PIP, PIN, RTN, RTP signal in the case of mode change
5	MPS	The line is hung up without replying to communication request.
6	PR1-Q	Cannot recognize PIP, PIN signal in the case of TALK request
7	No signal or DCN	No response in transmitter (cannot recognize DIS signal) or DCN signal received* (receiver side)
8	–	Error occurred upon completion of reception of all pages.
9	–	Error occurred when mode was changed or Transmission/Reception switching was performed.
10	–	Error occurred during partial page or physical page reception.
11	–	Error occurred after or during inquiry from the remote (transmitting) machine as to whether reception is possible or not.
12	–	Error occurred during or just after fallback.
13	–	Error occurred after the retransmission end command was received.

CHAPTER 3. MECHANISM BLOCKS

[1] General description

1. Document feed block and diagram

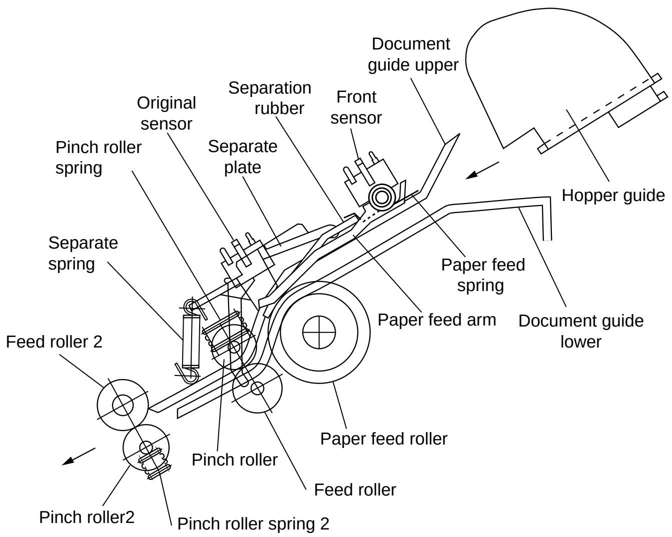


Fig. 1

2. Document feed operation

1) The original, which is set in the document hopper, feeds automatically when the front sensor is activated. This in turn activates the pulse motor which drives the document supply roller. The document stops when the lead edge is detected by the document sensor.
2) The lead edge of the original is fed a specified number of pulses after the lead edge of the document is detected for the reading process to begin.
3) The trailing edge of the original is fed a specific number of pulses after the trailing edge of the document deactivates the original sensor. The read process then stops and the original is discharged.
4) When the front sensor is in the OFF state (any document is not set up in the hopper guide), the drive will be stopped when the document is discharged.

3. Hopper mechanism

3-1. General view

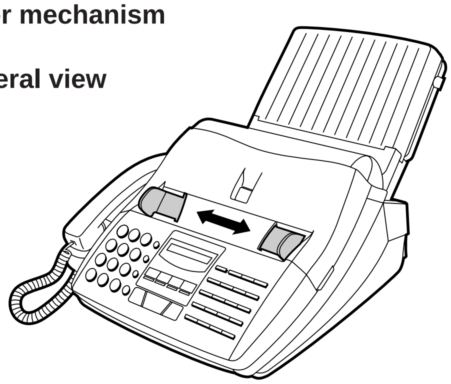


Fig. 2

The hopper section contains document guides that are used to adjust the hopper to the width of the original document. This ensures that the original feeds straight into the fax machine for scanning.
Document width: 148 mm to 216 mm (A5 longitudinal size to Letter longitudinal size)
NOTE: Adjust the document guide after setting up the document.

3-2. Automatic document feed

1) Use of the paper feed roller and separation rubber plate ensures error-free transport and separation of documents. The plate spring presses the document to the paper feed roller to assure smooth feeding of the document.
2) Document separation method: Separation rubber plate

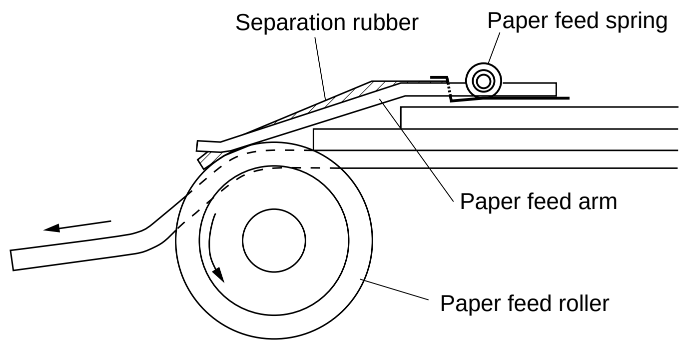


Fig. 3

3-3. Documents applicable for automatic feed

	4x6 series (788mm x 1091mm x 1000 sheets)		Square meter series	
	Minimum	Maximum	Minimum	Maximum
Feeder capacity	20 sheets, max.			
Paper weight	45kg	64.3kg	52g/m^2	74.3g/m^2
Paper thickness (ref.)	0.06mm	0.09mm	0.06mm	0.09mm
Paper size	128mm x 148mm ~ (MIN. SIZE) A4 (210mm x 297mm), Letter (216mm x 279mm)			

NOTE: Double-side coated documents and documents on facsimile recording paper should be inserted manually. The document feed quantity may be changed according to the document thickness.

Documents corresponding to a paper weight heavier than 64.3kg (74.3g/m^2) and lighter than 135kg (157g/m^2) are acceptable for manual feed.

Documents heavier than 135kg in terms of the paper weight must be duplicated on a copier to make it operative in the facsimile.

3-4. Loading the documents

1) Make sure that the documents are of suitable size and thickness, and free from creases, folds, curls, wet glue, wet ink, clips, staples and pins.
2) Place documents face down in the hopper.
   i) Adjust the document guides to the document size.
   ii) Align the top edge of documents and gently place them into the hopper. The first page under the stack will be taken up by the feed roller to get ready for transmission.

NOTES: 1) Curled edge of documents, if any, must be straighten out.
2) Do not load the documents of different sizes and/or thicknesses together.

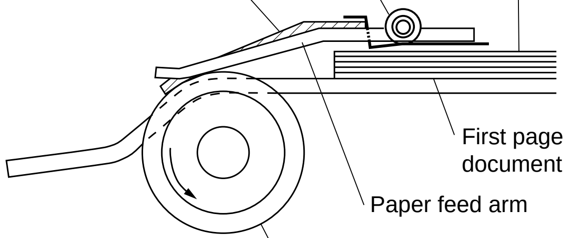


Fig. 4

3-5. Documents requiring use of copy

1) Documents smaller than 128mm x 148mm.
2) Documents thinner than the thickness of 0.06mm.
3) Documents containing creases, folds, or curls, especially those whose surface is curled (maximum allowable curl is 5mm).
4) Documents containing tears.
5) Carbon-backed documents. (Insert a white sheet of paper between the carbon back and the document carrier to avoid transfer of carbon to the carrier.)
6) Documents containing an easily separable writing material (e.g., those written with a lead pencil).
7) Transparent documents.
8) Folded or glued documents.

4. Document release

4-1. General

To correct a jammed document or to clean the document running surface, pull the operation panel lock lever under the front center of the operation panel. To open the upper document guide, the operation panel must be opened first.

5. Optical system

(1) General view

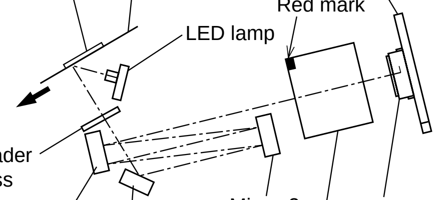


Fig. 5

(2) Composition

The optical system is composed of the document feed mechanism, the LED lamp, the reflecting mirrors, the focusing lens, the CCD sensor, and the read process circuit.

5-1. LED Lamp/Lens

The LED lamp is used to project light to the document.

NOTE: Take care for the position of the red mark on the lens. (Top of the light-projected side)

5-2. CCD

The CCD (charge coupled device) image sensor consists of a photodiode array which converts the intensity of light reflected from the document surface into series of analog voltages which are then stored in an ana log shift register. The series of analog voltages are then converted into a digital equivalent by a black/white binary logic circuit.

(Example) Scan signal output waveform

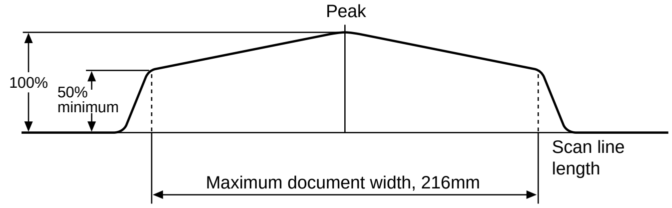


Fig. 6

1) The minimum output from the CCD at the maximum scan width of document (216mm) must be more than 50% of the peak value.
2) The peak output must be about 0.2 ~ 0.6 under room temperature to avoid CCD saturation.

6. Recording block

(1) General view

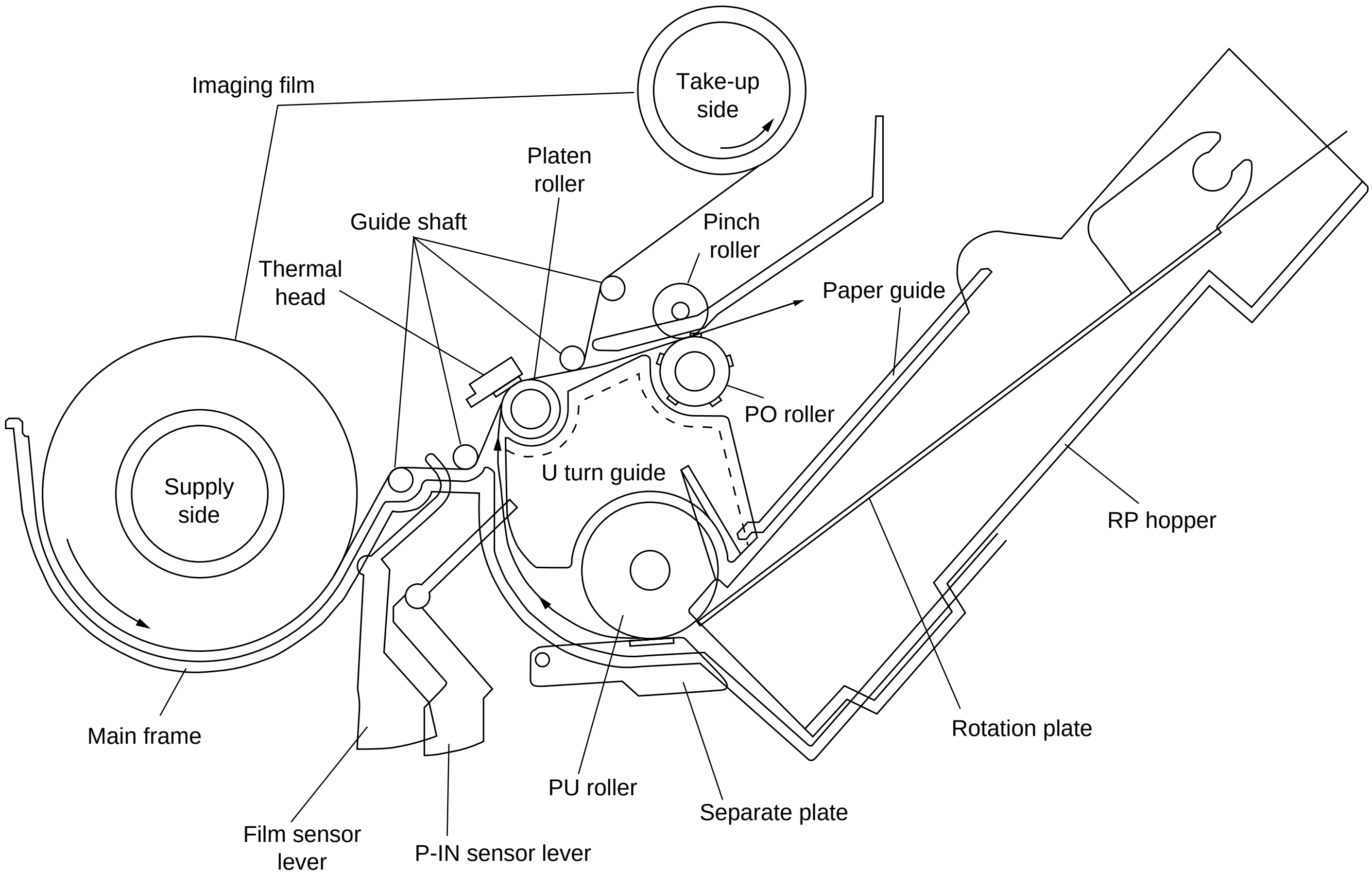


Fig. 7

6-1. Driving

In the drive mechanism, the rotating force of the pulse motor for both transmission and reception is transmitted to the paper supply roller, the recording paper feed roller and imaging film drive gear through the pulse motor axle gear, reduction gear and planetary gear.

6-2. Recording

This equipment employs the thermal transcription system which used the thermal head imaging film.

1) Thermal head

The thermal head is composed of 2,016 heating elements in traverse line, and the resolution power is 8 dots/mm. The maximum speed is 10 ms/line.

2) Structure of recording mechanism

Recording is achieved by applying a suitable pressure to the thermal head through the imaging film of the recording paper feed roller and the recording paper.
The main scanning is electronically done, and the sub-scanning is me chanically done (by sending the recording paper with the recording paper feed roller).

3) Recording paper transfer sequence

a) The recording paper stored in the RP hopper is fed with the PU roller, and the recording paper is stopped when the P-IN sensor is turned on by sensing its lead edge.

b) Hereafter, the imaging film and recording paper are transferred with the recording paper feed roller, and thermal transcription is done on the recording paper.

c) After thermal transcription, the imaging film is taken up by the roller on the take-up side, and the recording paper is discharged by the PO roller.

As basic, the density unevenness mainly results from the longitudinal misalignment of the thermal head to the heater line. Other-wise, the head is in uneven contact with the recording paper feed roller, or the imaging film is wrinkled.

The following items are described as the simplified checking method.

① Are the power and signal cables of the thermal head suitably treated?

② Does the same symptom appear even if the thermal head pres-sure spring is replaced?

③ Is the feed roller of the recording paper concentric? (Density is uneven at intervals.)

④ Does the same symptom appear even if the thermal head is replaced?

⑤ Is the imaging film stained or wrinkled?

[2] Disassembly and assembly procedures

- This chapter mainly describes the disassembly procedures. For the assembly procedures, reverse the disassembly procedures.
- Easy and simple disassembly/assembly procedures of some parts and units are omitted. For disassembly and assembly of such parts and units, refer to the Parts List.
- The numbers in the illustration, the parts list and the flowchart in a same section are common to each other.
- To assure reliability of the product, the disassembly and the assembly procedures should be performed carefully and deliberately.

1	Operation panel unit, document guide lower and rear cover

Parts list (Fig. 1)

No.	Part name	Q'ty	No.	Part name	Q'ty
1	Mechanism unit	1	9	Hook switch lever	1
2	Operation panel unit	1	10	Document guide lower unit	1
3	Screw (3×12)	2	11	Transfer gear	1
4	Side cover	1	12	Transfer bearing	3
5	Screw (3×12)	1	13	Transfer roller	1
6	Screw (3×10)	2	14	Feed gear ass'y	1
7	Rear cabinet	1	15	Paper feed roller	1
8	Screw (3×10)	4	16	Document guide lower	1

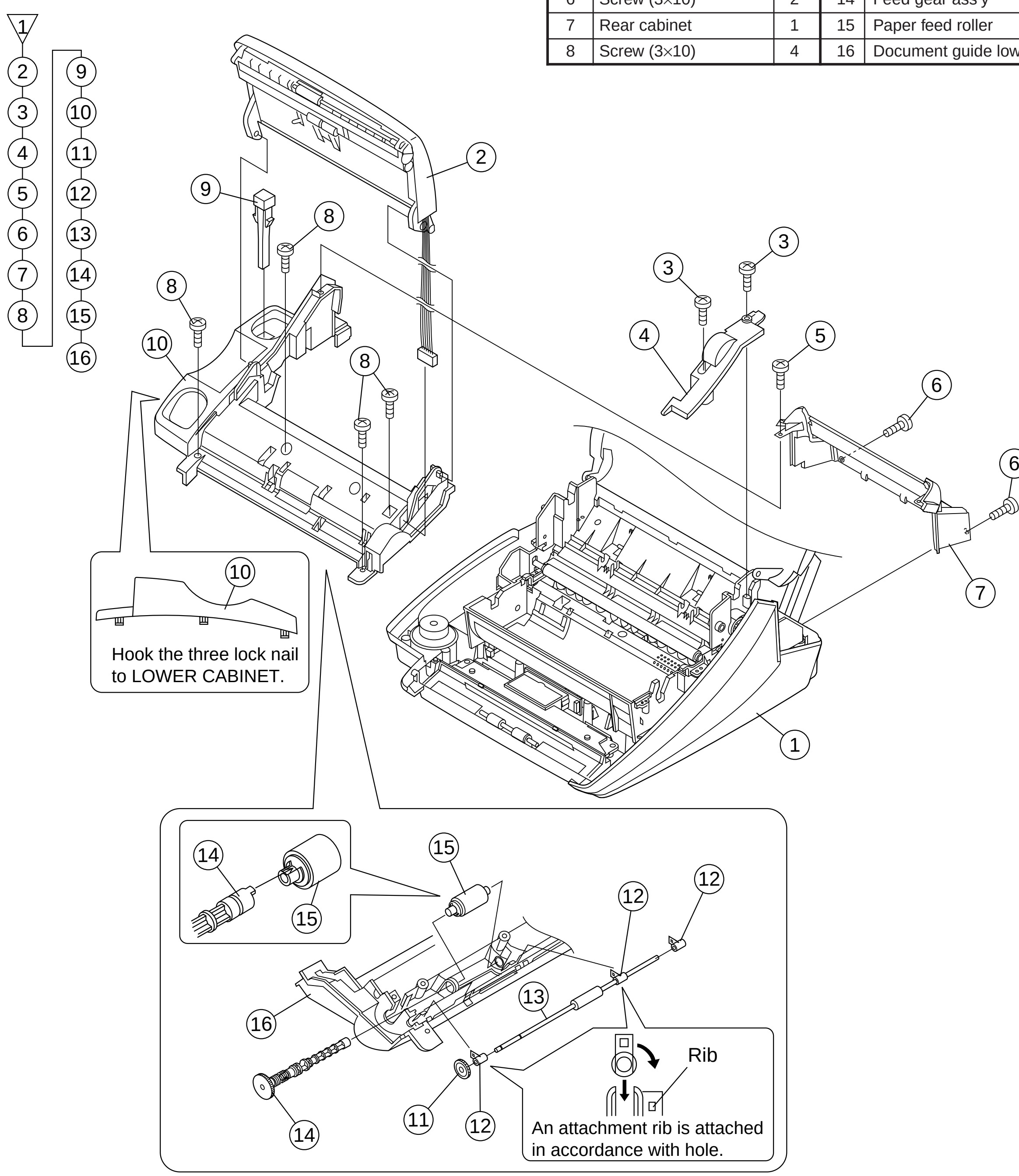


Fig. 1

2 Document guide upper

Parts list (Fig. 2)

No.	Part name	Q'ty	No.	Part name	Q'ty
1	Operation panel unit	1	10	Transfer bearing	2
2	Screw (3×10)	2	11	Transfer roller	1
3	Document guide upper unit	1	12	Separate spring	1
			13	Separate plate	1
4	Panel lock lever spring	1	14	Paper feed arm	2
5	Panel lock lever	1	15	Paper feed spring	1
6	Idler gear (28Z)	1	16	Separation rubber	1
7	Idler gear (20Z)	1	17	Pinch roller spring	2
8	Transfer gear 2	1	18	Pinch roller shaft	1
9	Rear sheet	1	19	Pinch roller	2
			20	Document guide upper	1

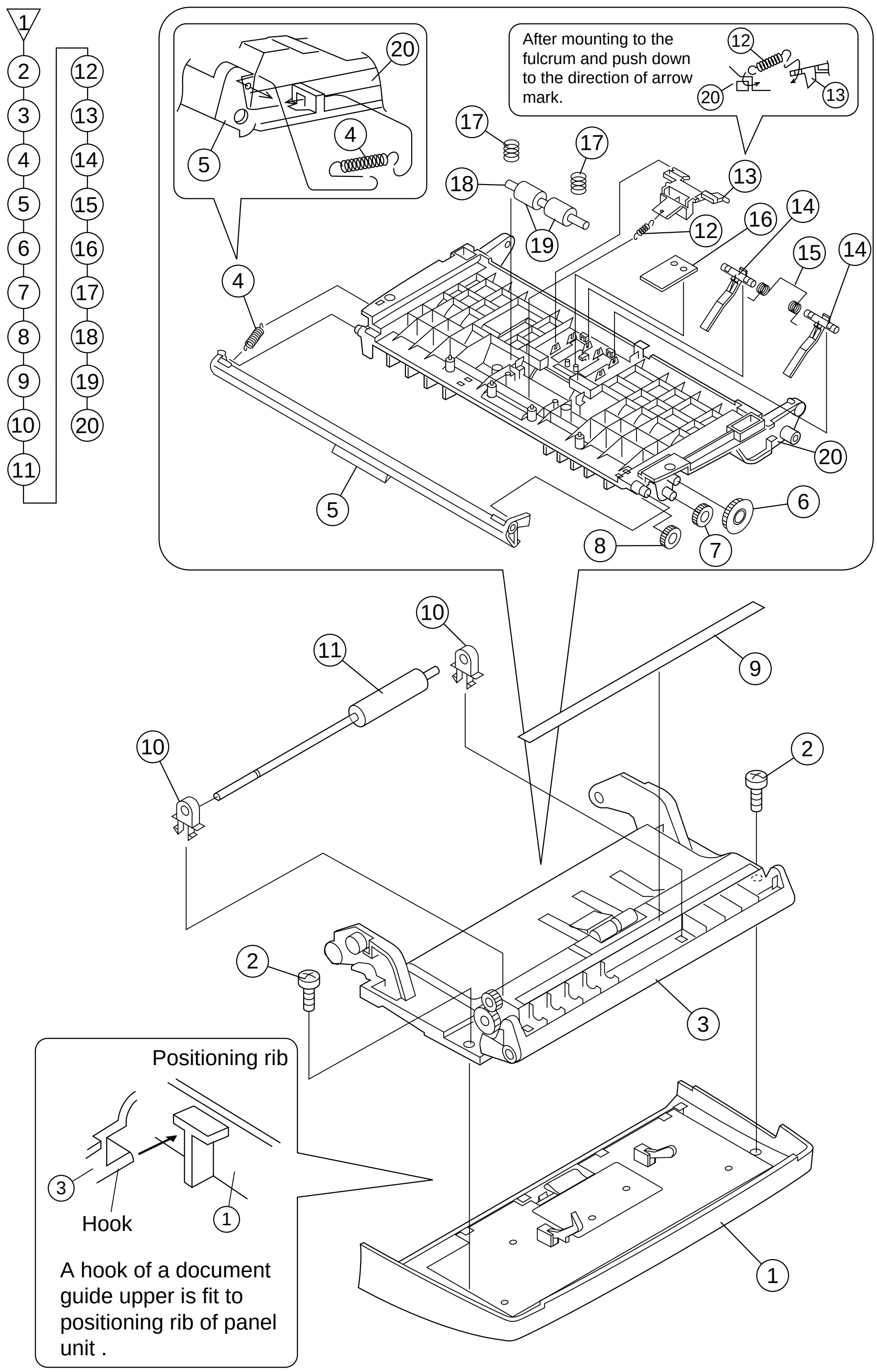


Fig. 2

3	**Operation panel**

Parts list (Fig. 3)

No.	Part name	Q'ty
1	Operation panel unit	1
2	Screw (2.6×6)	5
3	Insulation sheet	1
4	Operation panel PWB unit	1
5	12 key	1
6	Start key	1
7	Stop key	1
8	Mode key	1
9	Direct key	1
10	Panel cable	1
11	Operation panel	1

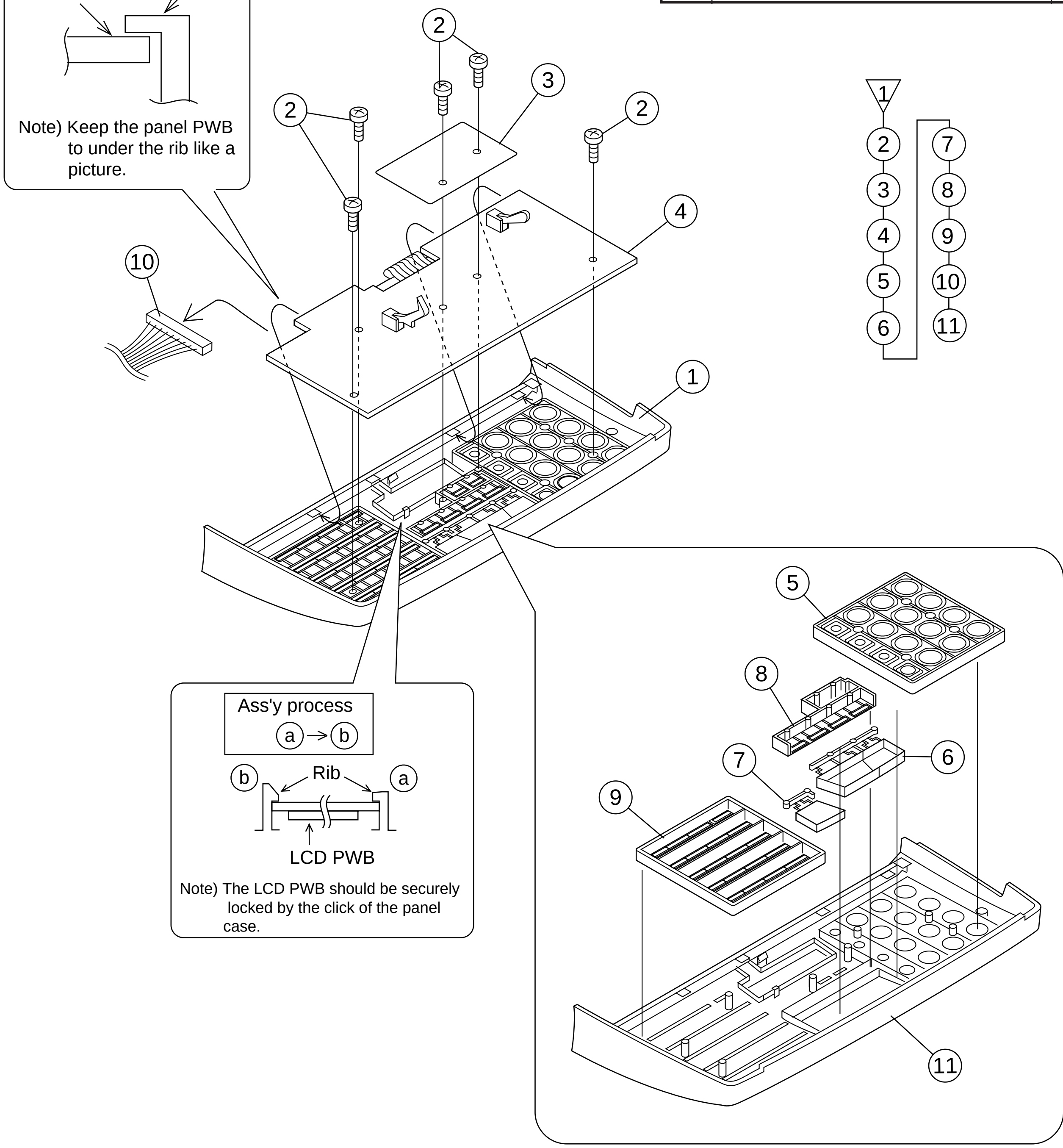


Fig. 3

4 Top cover and head frame unit

Parts list (Fig. 4)

No.	Part name	Q'ty
1	Mechanism unit	1
2	Top cover unit	1
3	Screw (3×10)	5
4	Head frame unit	1
5	Hopper guide, right	1
6	Hopper guide, left	1
7	Screw (3×6)	1
8	Pinion gear	1
9	Hopper spring	1
10	Top cover	1

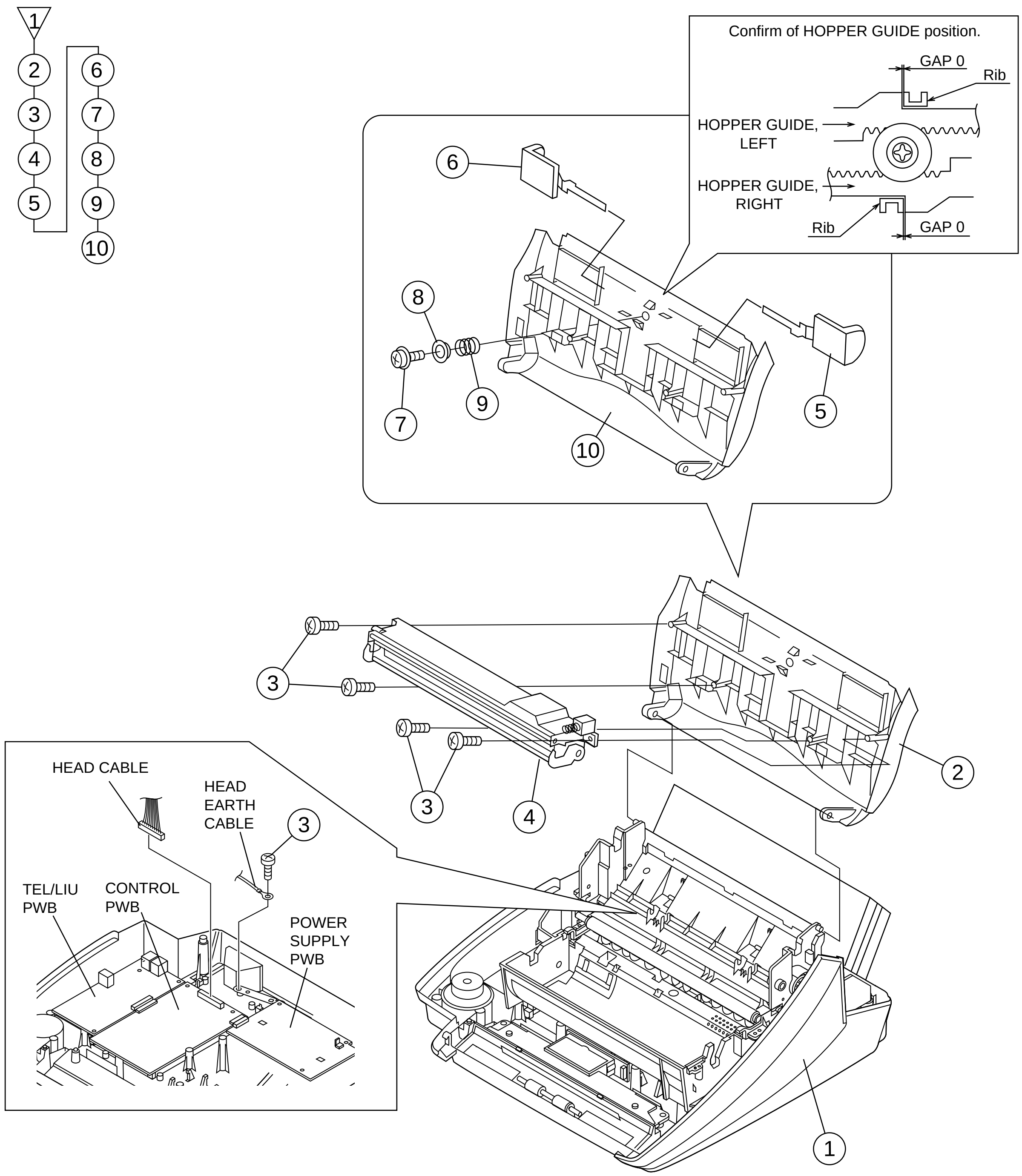


Fig. 4

5 Head frame and thermal head

Parts list (Fig. 5)

No.	Part name	Q'ty	No.	Part name	Q'ty
1	Release knob	1	11	Head spring 2	2
2	Lock spring	1	12	Head spring 1	1
3	Lock lever	1	13	Head frame	1
4	Screw (3×10)	1	14	Head cable	1
5	Pop up spring	1	15	Screw (3×6)	1
6	Cut washer	2	16	Head earth cable	1
7	Film guide shaft	2	17	Head guide, right	1
8	Head guide sheet	1	18	Screw (3×6)	1
9	Thermal head unit	1	19	Head guide, left	1
10	Head spring B	2	20	Thermal head	1

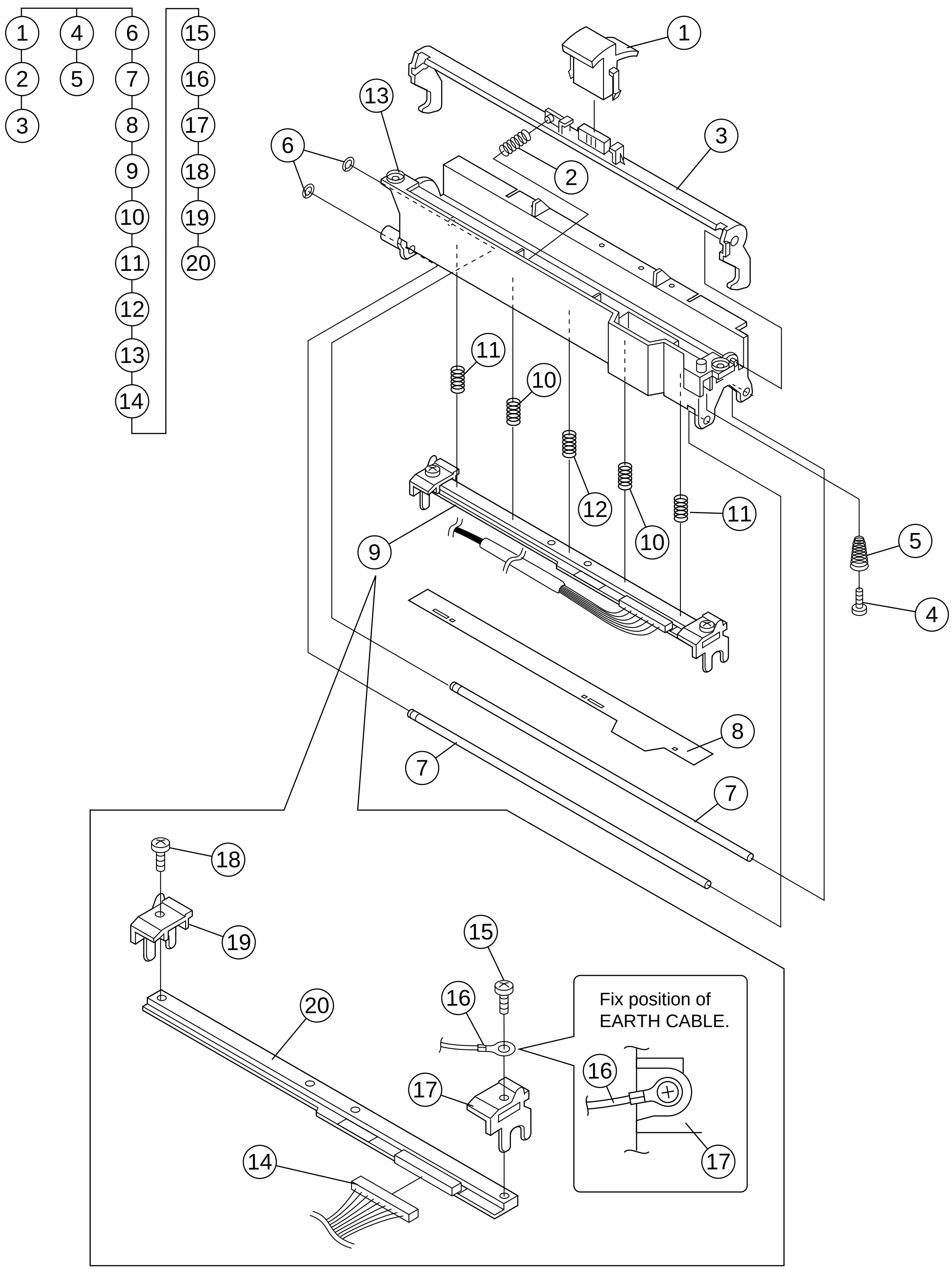


Fig. 5

6	Paper out guide

Parts list (Fig. 6)

No.	Part name	Q'ty
1	Mechanism unit	1
2	Screw (3×10)	2
3	Paper out guide unit	1
4	Idler gear A	1
5	Take-up gear	1
6	Slip gear ass'y	1
7	Cut washer	1
8	Film shaft C	1
9	PO pinch roller spring	2
10	PO pinch roller	2
11	Paper out guide	1

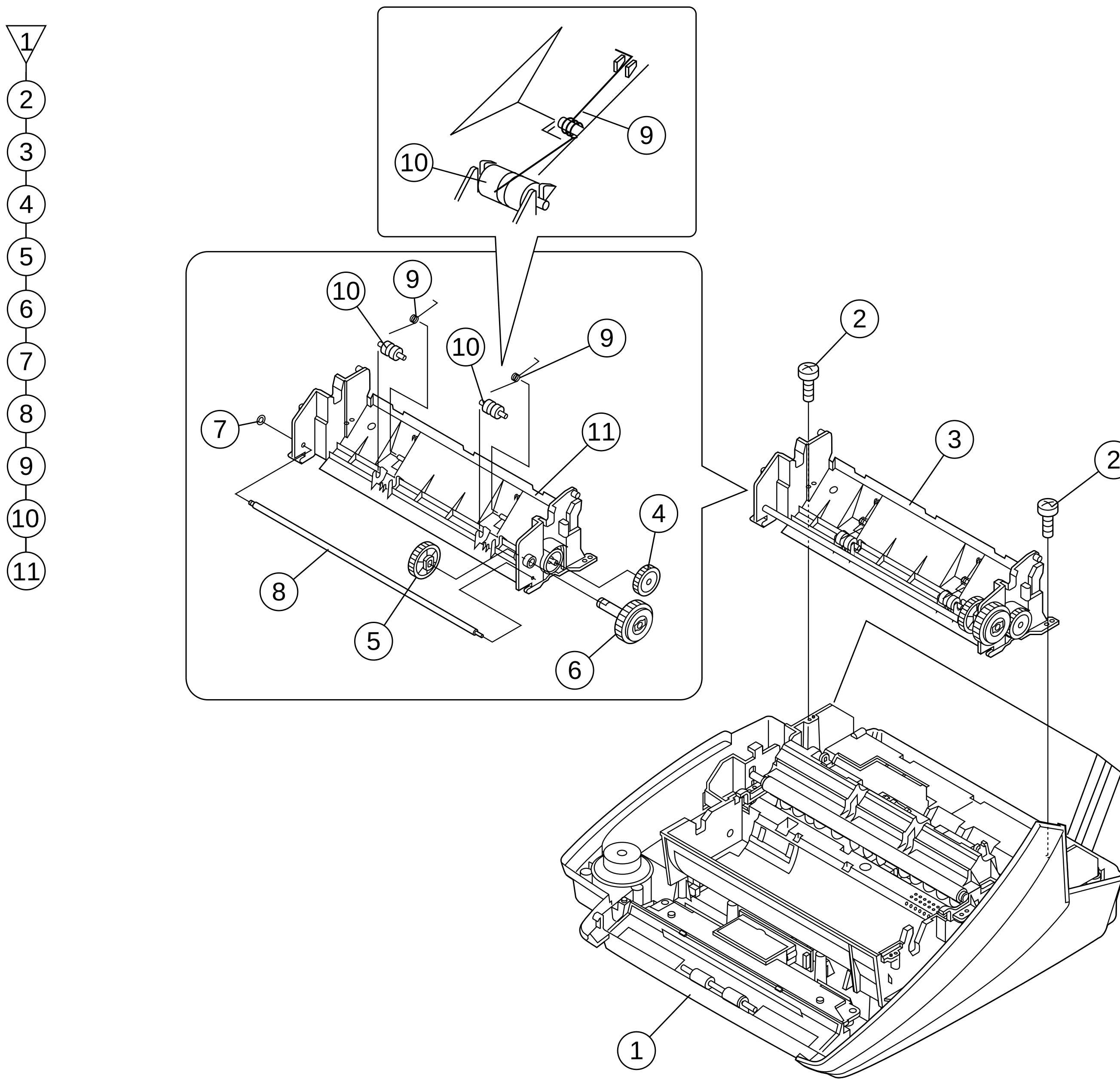
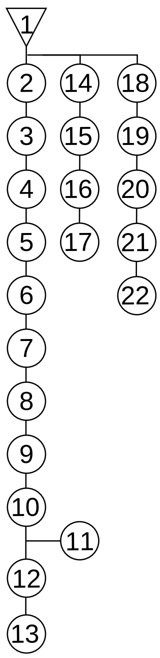


Fig. 6

7 Recording paper hopper, speaker and pinch roller

Parts list (Fig. 7)

No.	Part name	Q'ty	No.	Part name	Q'ty
1	Mechanism unit	1	12	Cassette spring	2
2	Screw (3×12)	2	13	RP hopper	1
3	RP hopper unit	1	14	Screw	2
4	Paper guide	1	15	Screw (3×10)	1
5	Screw	2	16	Speaker holder spring	1
6	RP release spring	1	17	Speaker	1
7	RP release gear, right	1	18	Pinch roller spring	2
8	RP release gear, left	1	19	Pinch roller	2
9	RP release plate	1	20	Document kick plate	1
10	Paper up plate	1	21	Document kick roller	1
11	RP pad	1	22	Pinch roller shaft	1



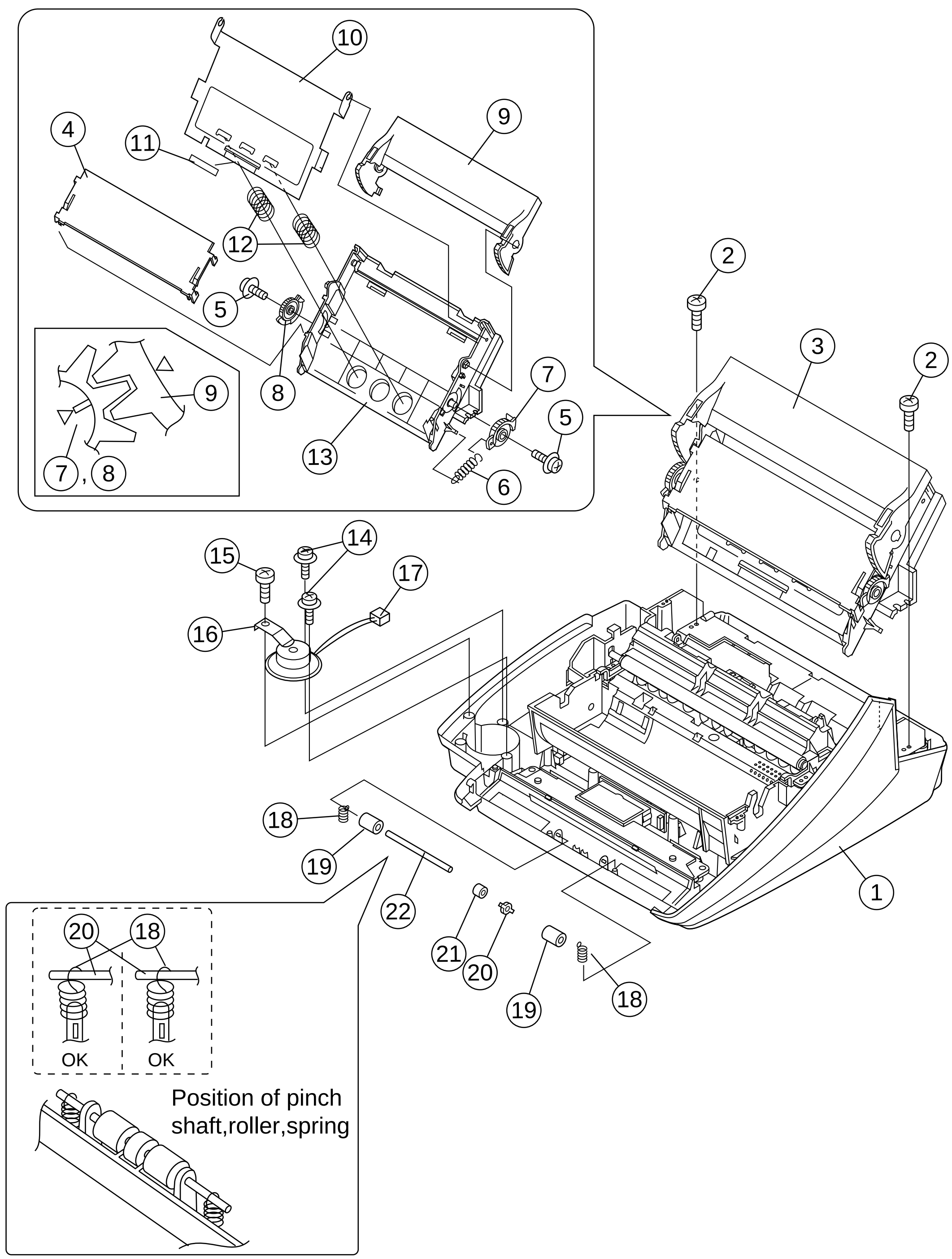


Fig. 7

8	Main frame unit, ROM cover, memory cover, drive unit and optical unit

Parts list (Fig. 8)

No.	Part name	Q'ty
1	Mechanism unit	1
2	Screw (3×10)	1
3	ROM cover	1
4	Memory cover	1
5	Screw (3×10)	1
6	Drive unit	1
7	Screw (3×10)	3
8	Main frame unit	1
9	Optical unit	1

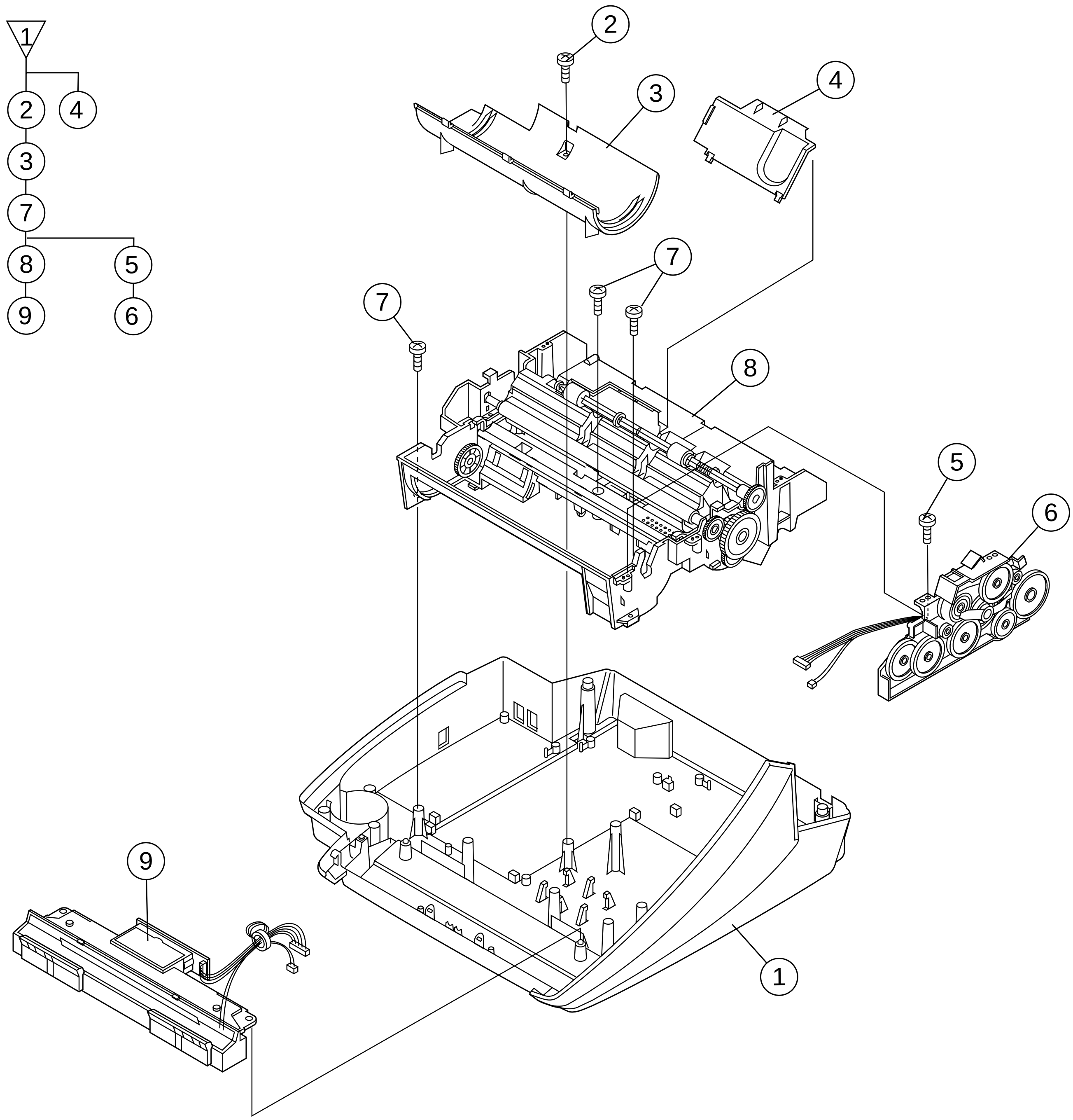
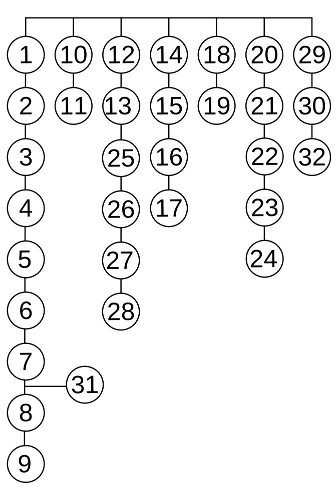


Fig. 8

9 Main frame, U turn guide and transfer roller etc.

Parts list (Fig. 9)

No.	Part name	Q'ty	No.	Part name	Q'ty	No.	Part name	Q'ty
1	Reduction gear A	1	11	PU roller ass'y	1	22	Slip spring	1
2	PU gear	1	12	PO roller ass'y	1	23	Hold down plate B	1
3	Platen bearing	1	13	U turn guide	1	24	Back tension stopper	1
4	Platen gear	1	14	Sensor lever spring	1	25	Separate plate spring	1
5	Platen bearing	1	15	Film sensor lever	1	26	Separate sheet	1
6	Platen roller	1	16	Sensor lever spring	1	27	Separate plate sheet	1
7	PO gear	1	17	P-IN sensor lever	1	28	Separate plate	1
8	Screw (3×10)	4	18	Pop up spring	1	29	Guide sheet, left	1
9	Film guide shaft B	1	19	Cover switch lever	1	30	Guide sheet, right	1
10	PU roller shaft	1	20	Back tension gear	1	31	PO gear cushion	1
			21	Back tension felt	1	32	Main frame	1



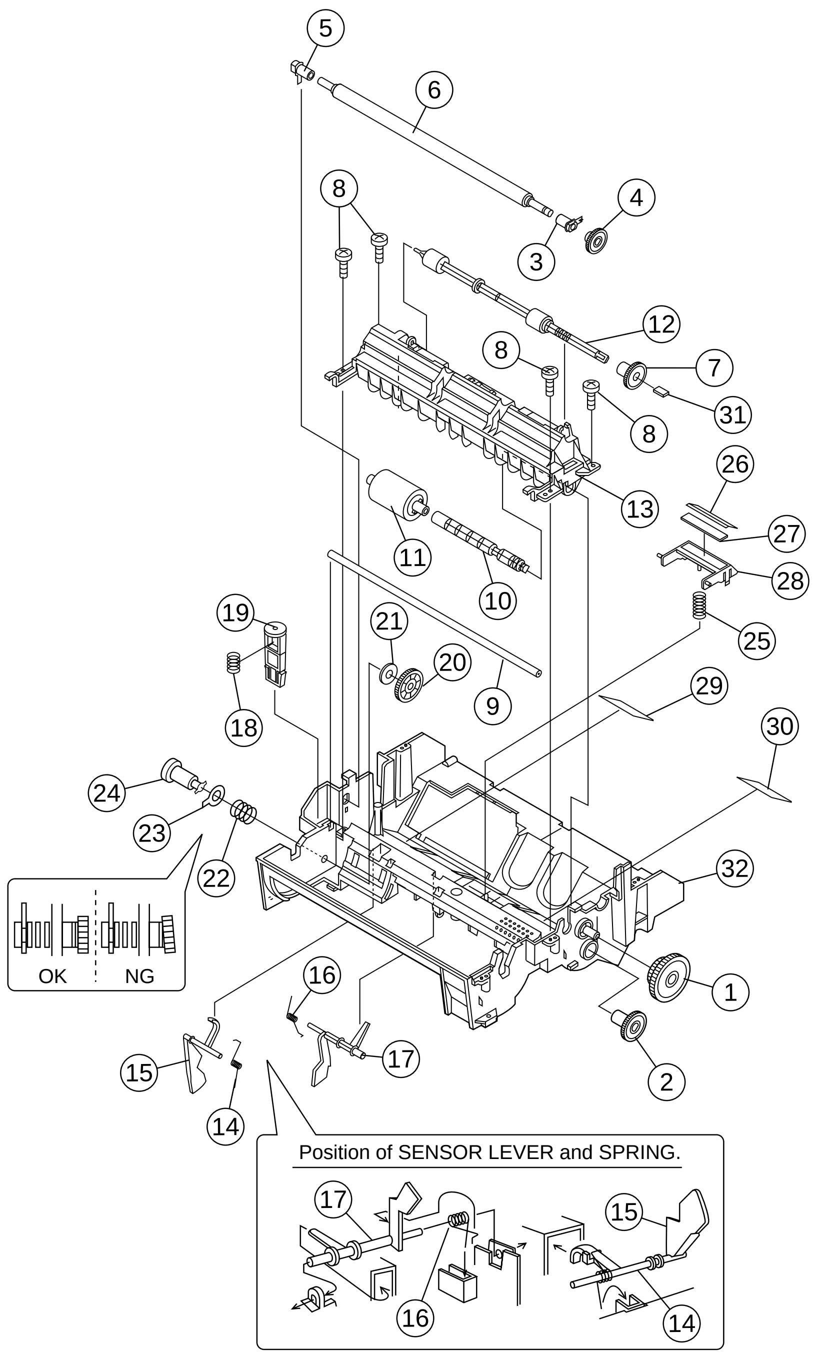


Fig. 9

10	Drive unit frame

Parts list (Fig. 10)

No.	Part name	Q'ty	No.	Part name	Q'ty
1	Drive unit	1	10	Planet lever A ass'y	1
2	Reduction gear B	1	11	Reduction gear C	2
3	Planet lever B ass'y	1	12	Cam switch ass'y	1
4	Idler gear A	1	13	Screw (3×10)	2
5	Idler gear C	1	14	Motor	1
6	Reduction gear A	1	15	Motor heat sink	1
7	Planet lever C ass'y	1	16	Cushion	1
8	Cam hold spring	1	17	Band	2
9	Cam A	1	18	Drive unit frame	1

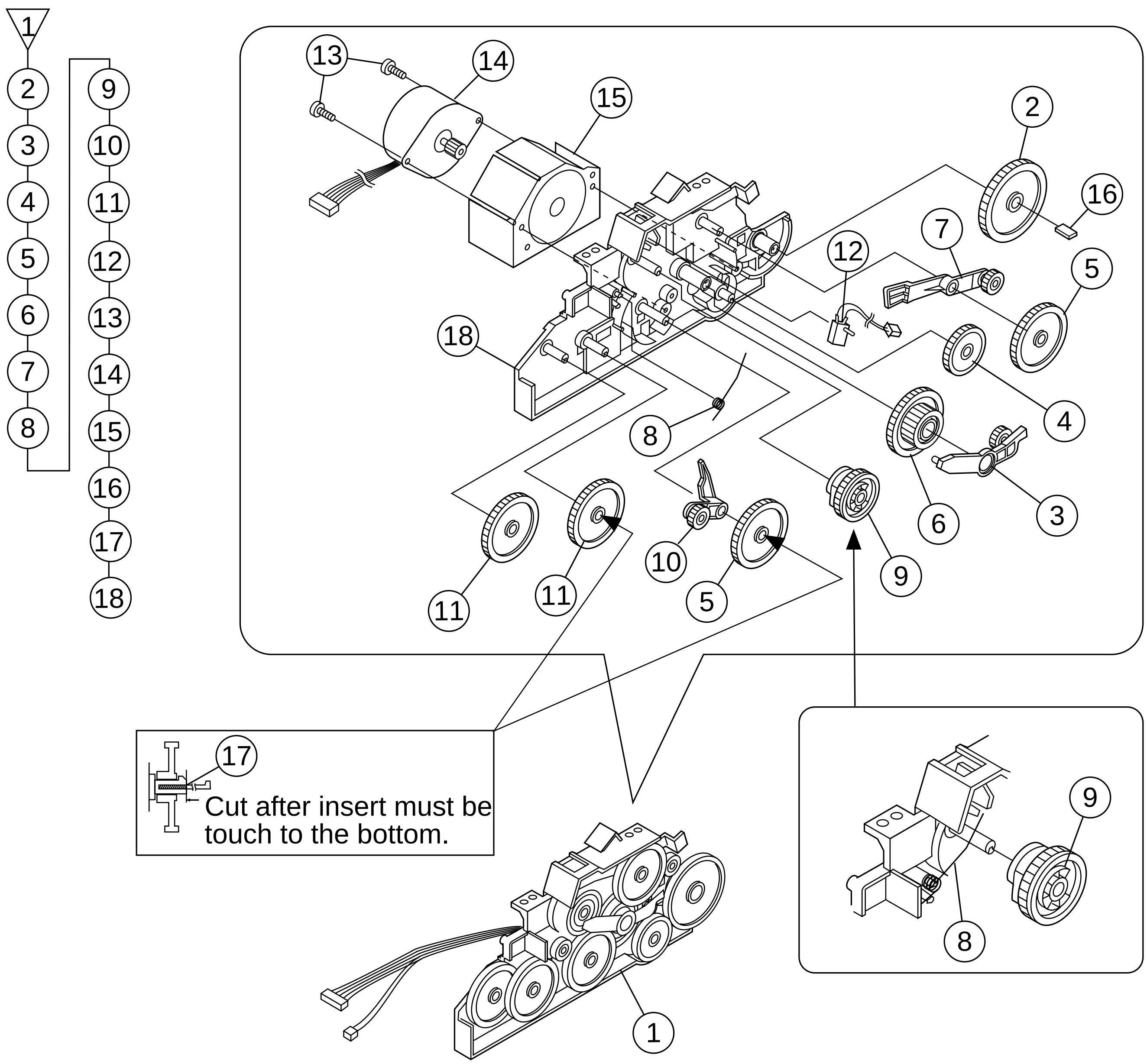
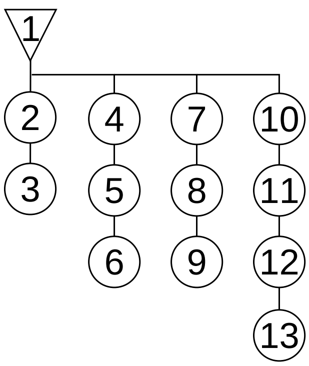


Fig. 10

11	**Optical frame**

Parts list (Fig. 11)

No.	Part name	Q'ty	No.	Part name	Q'ty
1	Optical unit	1	7	Reader glass	1
2	Screw	2	8	LED	1
3	CCD PWB unit	1	9	Shading sheet 3	2
4	Shading sheet	1	10	Mirror 3	1
5	Lens holding spring	1	11	Mirror 1	1
6	Lens	1	12	Mirror 2	1
			13	Optical frame	1



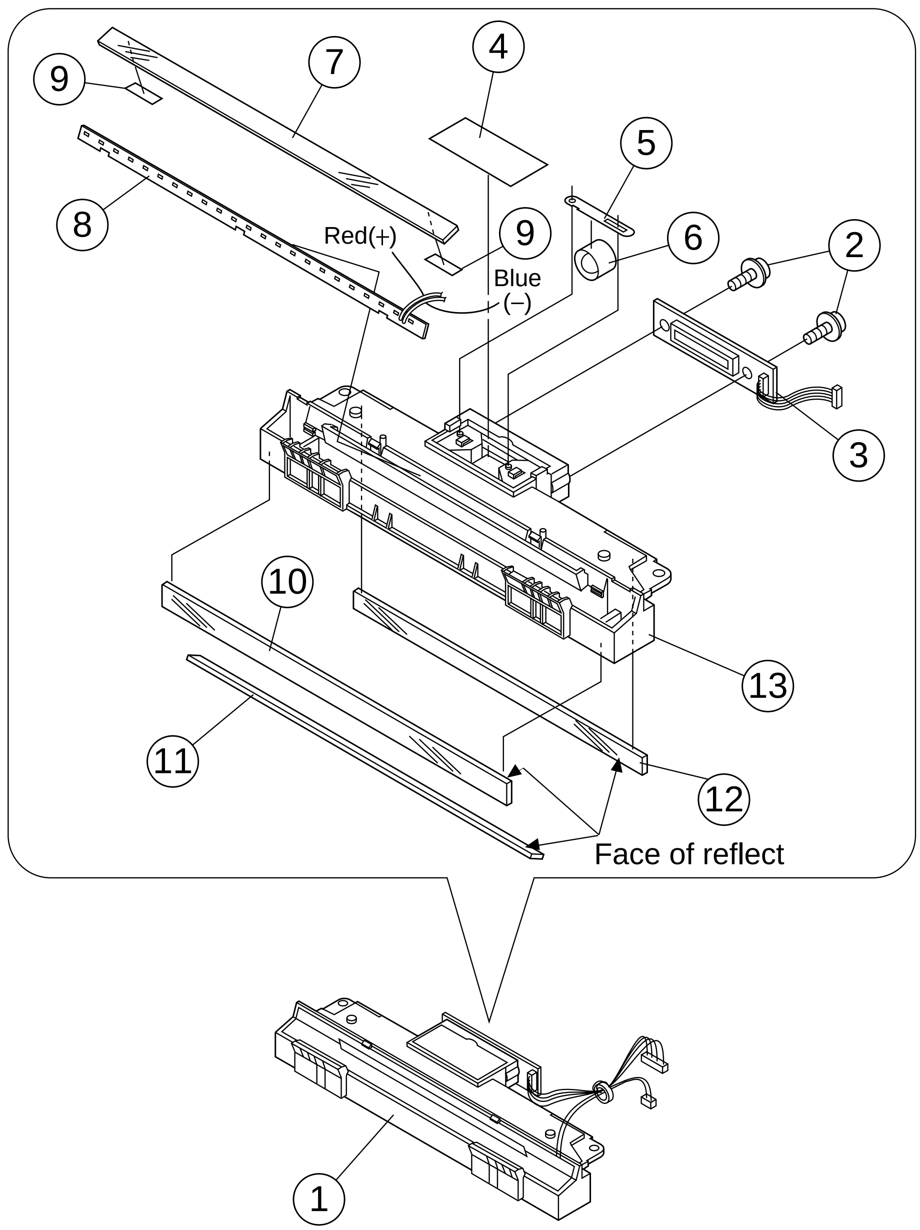


Fig. 11

12 PWB section

Parts list (Fig. 12)

No.	Part name	Q'ty	No.	Part name	Q'ty
1	Mechanism unit	1	7	Connector	2
2	Screw (3×6)	1	8	Control PWB unit	1
3	TEL/LIU ARG cable	1	9	TEL/LIU PWB unit	1
4	Screw (4×6)	1	10	Power supply PWB unit	1
5	AC cord	1	11	Earth plate	1
6	Screw (3×10)	6	12	Jack sheet	1

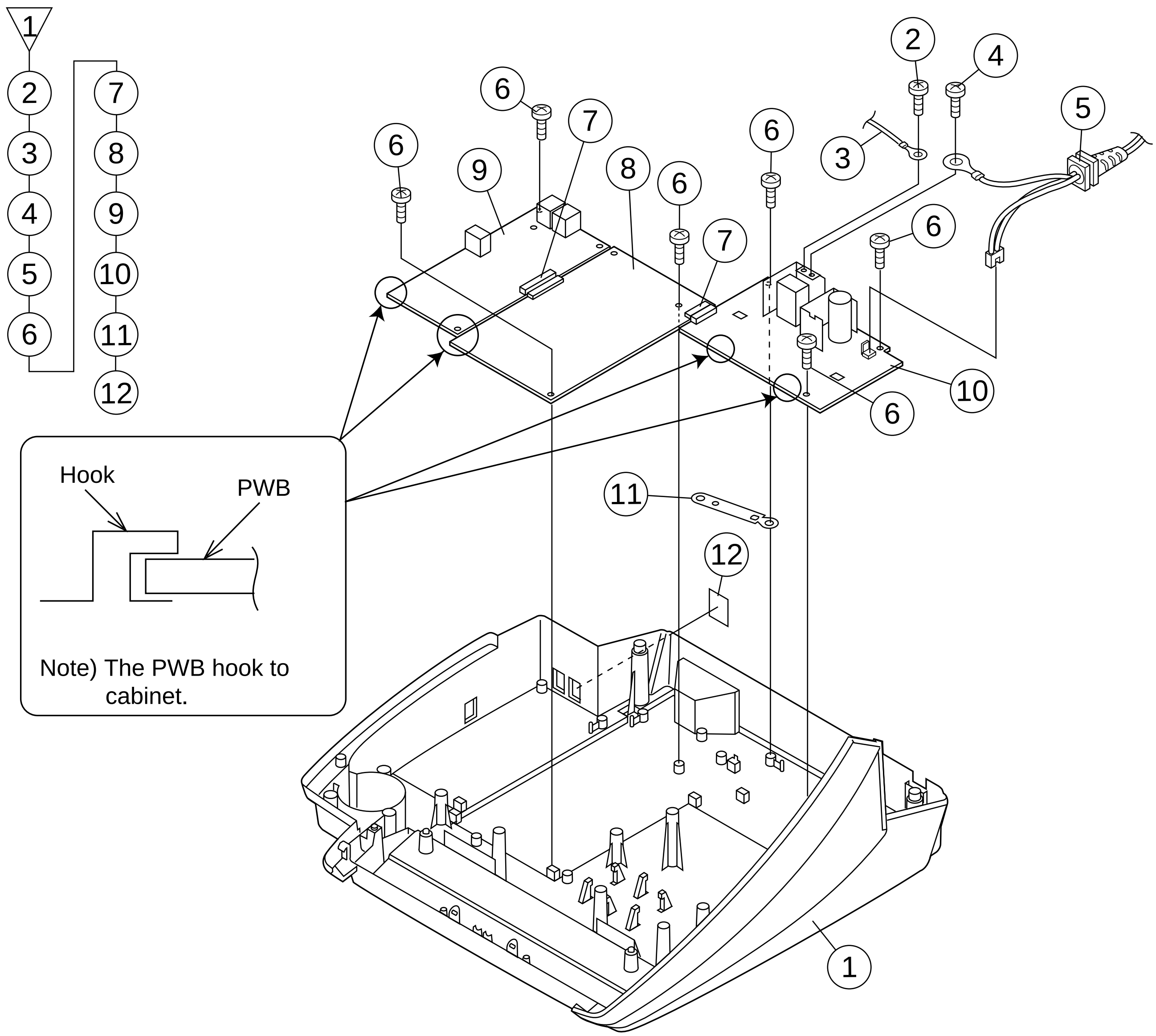


Fig. 12

13 Wire treatment

Parts list (Fig. 13)

No.	Part name	Q'ty	No.	Part name	Q'ty
1	Band (Black)	1	4	Screw (4×6)	1
2	Core (F2125)	2	5	Screw (3×10)	2
3	Screw (3×6)	1	6	Band (100mm)	5

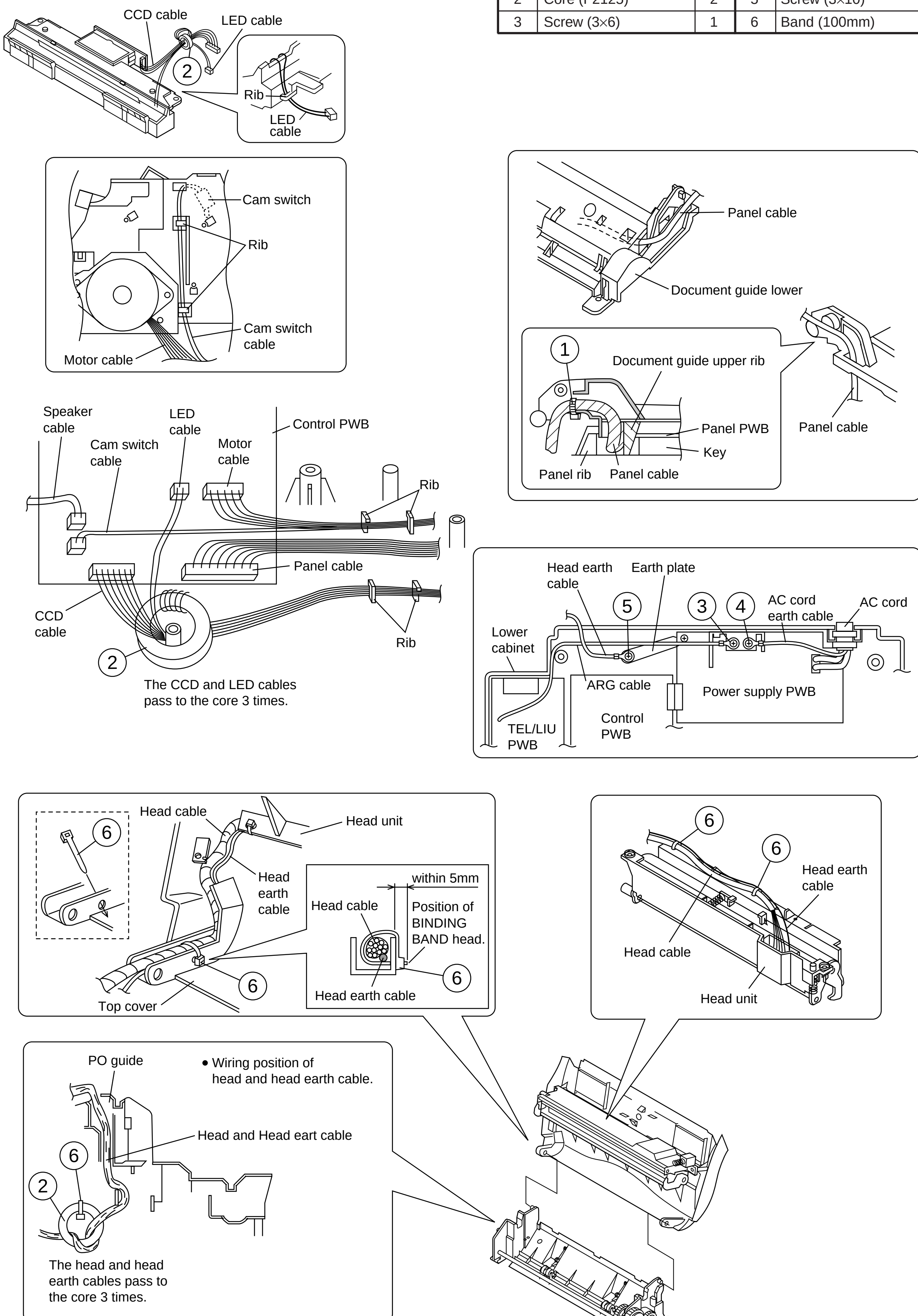
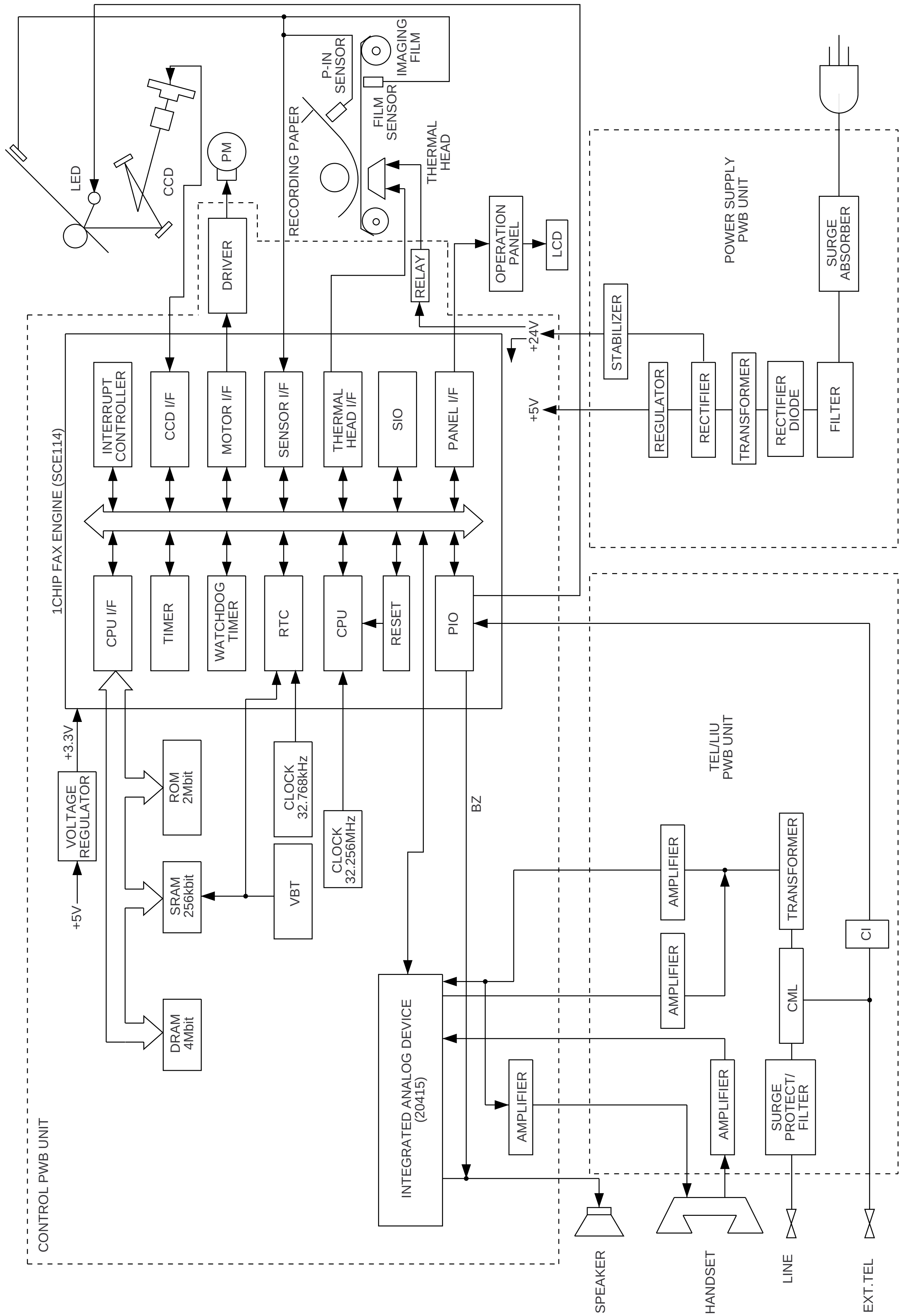


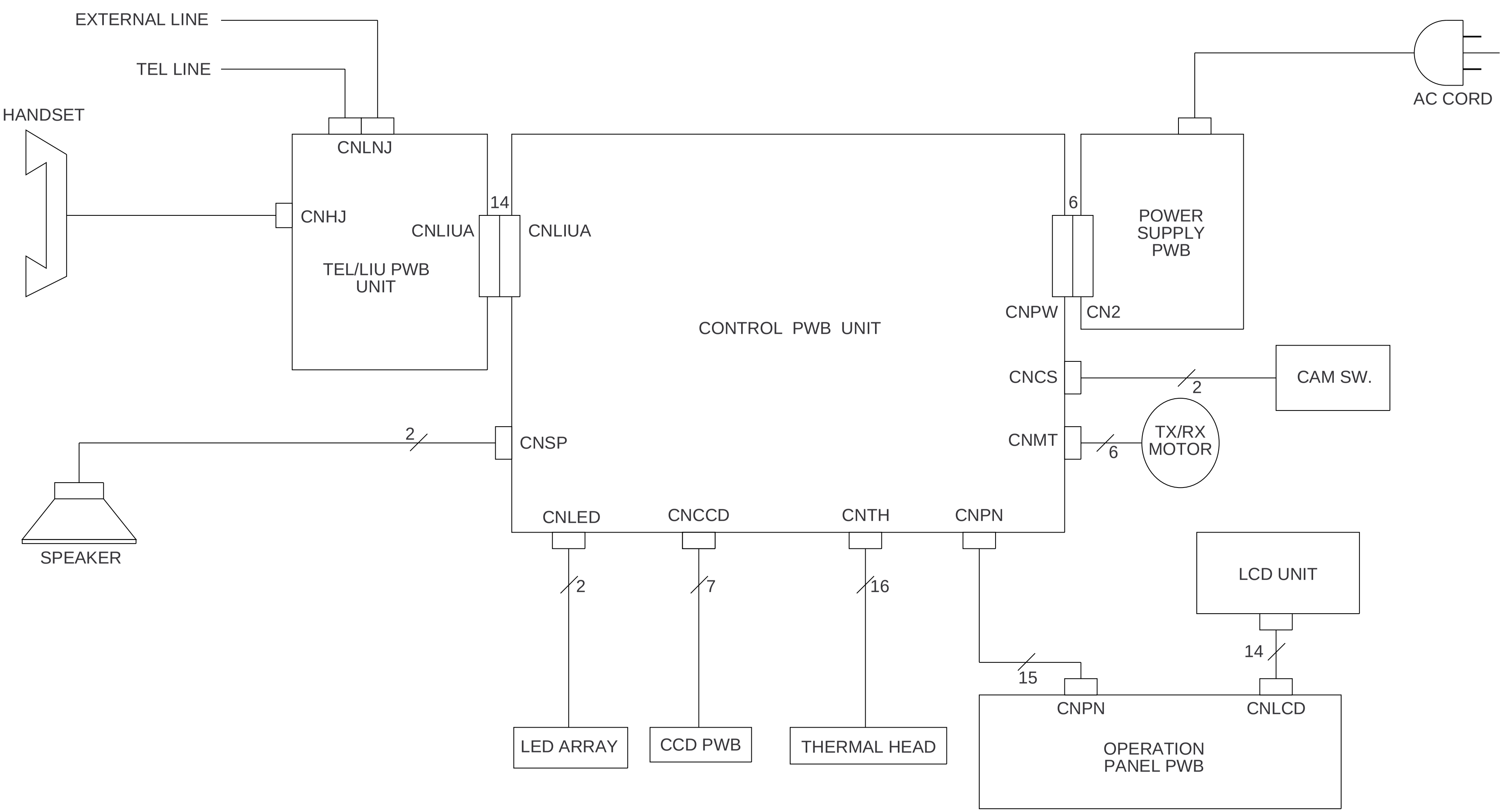
Fig. 13

CHAPTER 4. DIAGRAMS

[1] Block diagram



[2] Wiring diagram



[3] Point-to-point diagram

CONTROL PWB

TX/RX MOTOR — CNMT

TX/RX MOTOR	Pin	CNMT Pin	Signal
$\overline{\text{TPBD}}$	1	1	$\overline{\text{TPBD}}$
$\overline{\text{TPAD}}$	2	2	$\overline{\text{TPAD}}$
TPBD	3	3	TPBD
TPAD	4	4	TPAD
VMT	5	5	VMT
VMT	6	6	VMT

THERMAL HEAD — CNTH

THERMAL HEAD	Pin	CNTH Pin	Signal
VTH	1	1	VTH
VTH	2	2	VTH
$\overline{\text{STRB1}}$	3	3	$\overline{\text{STRB1}}$
$\overline{\text{STRB2}}$	4	4	$\overline{\text{STRB2}}$
THI	5	5	THI
N.C.	6	6	N.C.
THG	7	7	THG
THG	8	8	THG
THG	9	9	THG
THVDD	10	10	THVDD
$\overline{\text{STRB3}}$	11	11	$\overline{\text{STRB3}}$
$\overline{\text{STRB4}}$	12	12	$\overline{\text{STRB4}}$
$\overline{\text{LATCH}}$	13	13	$\overline{\text{LATCH}}$
PCLK	14	14	PCLK
DATA	15	15	DATA
VTH	16	16	VTH

OPERATION PANEL PWB (CNPN) — CNPN

OPERATION PANEL PWB CNPN	Pin	CNPN Pin	Signal
KEN4A	1	1	KEN4A
KEN3A	2	2	KEN3A
KEN2A	3	3	KEN2A
KEN1A	4	4	KEN1A
DG	5	5	DG
DG	6	6	DG
+5V	7	7	+5V
$\overline{\text{ORGSNS}}$	8	8	$\overline{\text{ORGSNS}}$
$\overline{\text{FRSNS}}$	9	9	$\overline{\text{FRSNS}}$
E	10	10	E
SEN4	11	11	SEN4
SEN3	12	12	SEN3
SEN2	13	13	SEN2
SEN1	14	14	SEN1
SEN0	15	15	SEN0

CCD PWB — CNCCD

CCD PWB	Pin	CNCCD Pin	Signal
VO	1	1	VO
VCCD	2	2	VCCD
VG	3	3	VG
øT	4	4	øT
ø2	5	5	ø2
ø1	6	6	ø1
øR	7	7	øR

CNLIUA — TEL/LIU PWB (CNLIUA)

CNLIUA Signal	Pin	TEL/LIU PWB CNLIUA Pin	Signal
PE1	1	1	N.C.
TEL OUT	2	2	TEL OUT
TEL IN	3	3	TEL IN
TEL MUTE	4	4	TEL MUTE
CI	5	5	CI
HS	6	6	N.C.
CML	7	7	CML
TXOUT	8	8	TXOUT
RXIN	9	9	RXIN
$\overline{\text{RHS}}$	10	10	$\overline{\text{RHS}}$
$\overline{\text{DOOR SW}}$	11	11	$\overline{\text{DOOR SW}}$
+5V	12	12	+5V
DG	13	13	DG
+24VA	14	14	+24V

CNPW — POWER SUPPLY PWB (CN2)

CNPW Signal	Pin	POWER SUPPLY PWB CN2 Pin	Signal
+24V	1	1	+24V
+24V	2	2	+24V
MG	3	3	MG
MG	4	4	MG
+5V	5	5	+5V
DG	6	6	DG

CNCSW — CAM SWITCH

CNCSW Signal	Pin	CAM SWITCH Pin	Signal
$\overline{\text{CSW}}$	1	1	$\overline{\text{CSW}}$
DG	2	2	DG

CNSP — SPEAKER

CNSP Signal	Pin	SPEAKER Pin	Signal
SP+	1	1	SP+
SP-	2	2	SP-

CNLED — LED

CNLED Signal	Pin	LED Pin	Signal
+24V	1	1	+24V
$\overline{\text{LEDON}}$	2	2	$\overline{\text{LEDON}}$

CHAPTER 5. CIRCUIT DESCRIPTION

[1] Circuit description

1. General description

The compact design of the control PWB is obtained by using CONEXANT fax engine in the main control section and high density printing of surface mounting parts. Each PWB is independent according to its function as shown in Fig. 1.

2. PWB configuration

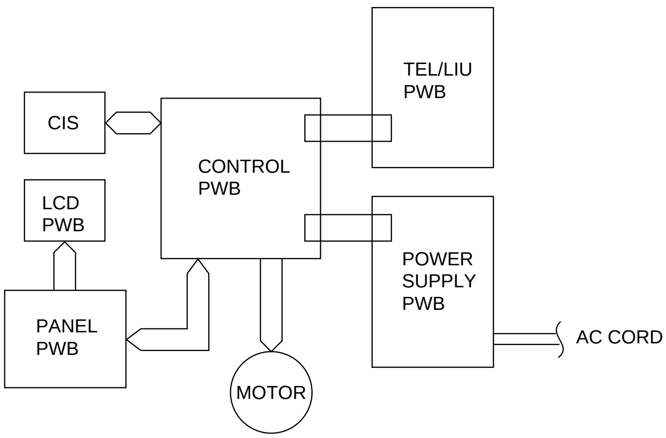


Fig. 1

1) Control PWB

The control PWB controls peripheral PWBs, mechanical parts, transmission, and performs overall control of the unit.
This machine employs a 1-chip modem (SCE114) which is in-stalled on the control PWB.

2) TEL/LIU PWB

This PWB controls connection of the telephone line to the unit.

3) Power supply PWB

This PWB provides voltages of +5V and +24V to the other PWBs.

4) Panel PWB

The panel PWB allows input of the operation keys.

5) LCD PWB

This PWB controls the LCD display.

6) CCD PWB

This PWB controls the pickup optical device.

3. Operational description

Operational descriptions are given below:

- Transmission operation

  When a document is loaded in standby mode, the state of the document sensor is sensed via the 1 chip fax engine (SCE114). If the sensor signal was on, the motor is started to bring the document into the standby position. With depression of the START key in the off-hook state, transmission takes place.
  Then, the procedure is sent out from the modem and the motor is rotated to move the document down to the scan line. In the scan processor, the signal scanned by the CCD is sent to the internal image processor and the AD converter to convert the analog signal into binary data. This binary data is transferred from the scan processor to the image buffer within the RAM and encoded and stored in the transmit buffer of the RAM. The data is then converted from parallel to serial form by the modem where the serial data is modulated and sent onto the line.

- Receive operation

  There are two ways of starting reception, manual and automatic.
  Depression of the START key in the off-hook mode in the case of manual receive mode, or CI signal detection by the LIU in the automatic receive mode.

  First, the SCE114 controls the procedure signals from the modem to be ready to receive data. When the program goes into phase C, the serial data from the modem is converted to parallel form in the modem interface of the 1 chip fax engine (SCE114) which is stored in the receive buffer of the RAM. The data in the receive buffer is decoded software-wise to reproduce it as binary image data in the image buffer. The data is DMA transferred to the recording processor within the SCE114 which is then converted from parallel to serial form to be sent to the thermal head. The data is printed line by line by the SCE114 which is assigned to control the motor rotation and strobe signal.

- Copy operation

  To make a copy on this facsimile, the COPY key is pressed when the machine is in stand-by with a document on the document table and the telephone set is in the on-hook state.

  First, depression of the COPY key advances the document to the scan line. Similar to the transmitting operation, the image signal from the CCD is converted to a binary signal in the DMA mode via the 1 chip fax engine (SCE114) which is then sent to the image buffer of the RAM. Next, the data is transferred to the recording processor in the DMA mode to send the image data to the thermal head which is printed line by line. The copying takes place as the operation is repeated.

[2] Circuit description of control PWB

1. General description

Fig. 2 shows the functional blocks of the control PWB, which is composed of 5 blocks.

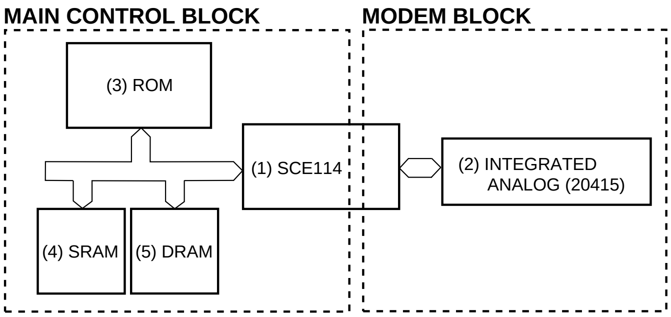


Fig. 2 Control PWB functional block diagram

2. Description of each block

(1) Main control block

The main control block is composed of CONEXANT 1 chip fax engine (SCE114), ROM (2Mbit), SRAM (256kbit), DRAM (4Mbit) and Integrated Analog (20415).
Devices are connected to the bus to control the whole unit.

1) SCE114 (IC9) : pin-176 QFP (FAX CONTROLLER)

2) 20415 (IC13) : pin-32 QFP (INTEGRATED ANALOG)

The FAX ENGINE Integrated Facsimile Controllers.

SCE114, contains an internal 8 bit microprocessor with an external 2 Mbyte address space and dedicated circuitry optimized for facsimile image processing and facsimile machine control and monitoring.

3) 27L2000 (IC4): pin-32 DIP (ROM)

ROM of 2Mbit equipped with software for the main CPU.

4) W24258S-70LE (IC8): pin-28 SOP (SRAM)

Line memory for the main CPU system RAM area and coding/decoding process. Used as the transmission buffer.

Memory of recorded data such as daily report and auto dials. When the power is turned off, this memory is backed up by the lithium battery.

5) MSM51V4800E (IC5): pin-28 SOJ (DRAM)

Image memory for recording process.

- Memory for recording pixel data without paper.

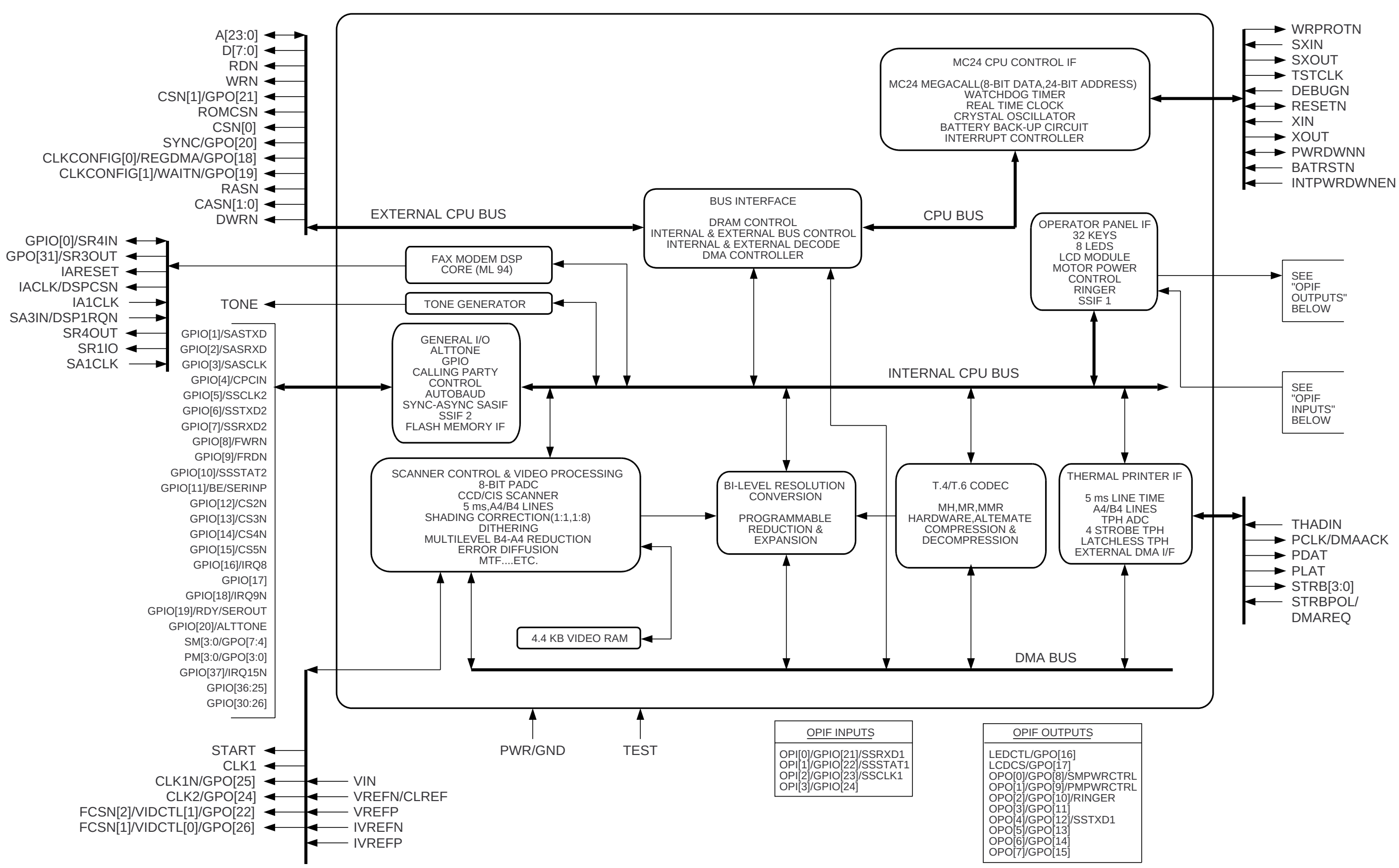


Fig. 3

SCE114 (IC9) Terminal descriptions

Pin No.	Pin List	I/O	Input Type	Output Type	Pin Description
1	VSS	–	–	–	Digital ground.
2	D[3]	I/O	Tu	13Xs	CPU data bus.
3	D[2]	I/O	Tu	13Xs	CPU data bus.
4	D[1]	I/O	Tu	13Xs	CPU data bus.
5	D[0]	I/O	Tu	13Xs	CPU data bus.
6	A[23]/EYEXY	I/O	Tu	13Xs	CPU address bus.
7	A[22]/EYESYNC	I/O	Tu	13Xs	CPU address bus.
8	A[21]/EYECLK	I/O	Tu	13Xs	CPU address bus.
9	A[20]	I/O	Tu	13Xs	CPU address bus.
10	A[19]	I/O	Tu	13Xs	CPU address bus.
11	A[18]	I/O	Tu	13Xs	CPU address bus.
12	VDD	–	–	–	Digital power.
13	A[17]	I/O	Tu	13Xs	CPU address bus.
14	A[16]	I/O	Tu	13Xs	CPU address bus.
15	A[15]	I/O	Tu	13Xs	CPU address bus.
16	A[14]	I/O	Tu	13Xs	CPU address bus.
17	VSS	–	–	–	Digital ground.
18	A[13]	I/O	Tu	13Xs	CPU address bus.
19	A[12]	I/O	Tu	13Xs	CPU address bus.
20	A[11]	I/O	Tu	13Xs	CPU address bus.
21	A[10]	I/O	Tu	13Xs	CPU address bus.
22	A[9]	I/O	Tu	13Xs	CPU address bus.
23	A[8]	I/O	Tu	13Xs	CPU address bus.
24	A[7]	I/O	Tu	13Xs	CPU address bus.
25	A[6]	I/O	Tu	13Xs	CPU address bus.
26	A[5]	I/O	Tu	13Xs	CPU address bus.
27	A[4]	I/O	Tu	13Xs	CPU address bus.
28	VDD	–	–	–	Digital power.
29	A[3]	I/O	Tu	13Xs	CPU address bus.
30	A[2]	I/O	Tu	13Xs	CPU address bus.
31	A[1]	I/O	Tu	13Xs	CPU address bus.
32	A[0]	I/O	Tu	13Xs	CPU address bus.
33	GPIO[20]/ALTTONE	I/O	Hu	13Xs	GPIO[20] or ALTTONE.
34	NC	–	–	–	No connection.
35	NC	–	–	–	No connection.
36	NC	–	–	–	No connection.
37	NC	–	–	–	No connection.
38	NC	–	–	–	No connection.
39	GPIO[19]/RDY/SEROUT	I/O	Hu	13Xs	GPIO[19], bus ready or serial port data output for autobaud detection.
40	GPIO[11]/BE/SERINP	I/O	Hu	13Xs	GPIO[11], bus enable or serial port data input for autobaud detection.
41	VSS	–	–	–	Digital ground.
42	PCLK/DMAACK	O	–	3XC	Thermal Print Head (TPH) clock or ext. DMA acknowledge.
43	PDAT	O	–	2XC	Serial printing data (to TPH).
44	PLAT	O	–	3XC	TPH data latch.
45	STRB[3]	O	–	1XC	Strobe signal for TPH.
46	STRB[2]	O	–	1XC	Strobe signal for TPH.
47	STRB[1]	O	–	1XC	Strobe signal for TPH.
48	STRB[0]	O	–	1XC	Strobe signal for TPH.
49	STRBPOL/DMAREQ	I	H	–	Sets strobe polarity active high/low or ext. DMA request.
50	VDD	–	–	–	Digital power.
51	GPIO[17]	I/O	Hu	13Xs	GPIO[17].
52	GPIO[16]/IRQ[8]	I/O	Hu	13Xs	GPIO[16] or ext. interrupt with priority 8.
53	GPIO[15]/CS[5]n	I/O	Hu	13Xs	GPIO[15] or I/O chip select 5.
54	GPIO[14]/CS[4]n	I/O	Hu	13Xs	GPIO[14] or I/O chip select 4.
55	GPIO[13]/CS[3]n	I/O	Hu	13Xs	GPIO[13] or I/O chip select 3.
56	GPIO[12]/CS[2]n	I/O	Hu	13Xs	GPIO[12] or I/O chip select 2.
57	GPIO[4]/CPCIN	I/O	Hu	13Xs	GPIO[4] or Call Party Control input.
58	VSS	–	–	–	Digital ground.
59	LEDCTL/GPO[16]	O	–	4XC	Indicates the OPO[7:0] outputs are for LEDs or GPO[16].
60	NC	–	–	–	No connection.
61	LEDCS/GPO[17]	O	–	1XC	LCD Chip select or GP0[17].
62	GPIO[7]/SSRXD2	I/O	Hu	13Xs	GPIO[7] or SSIF2 receive data.
63	GPIO[6]/SSTXD2	I/O	Hu	13Xs	GPIO[6] or SSIF2 transmit data.

SCE114 (IC9) Terminal descriptions

Pin No.	Pin List	I/O	Input Type	Output Type	Pin Description
64	GPIO[5]/SSCLK2	I/O	Hu	13Xs	GPIO[5] or SSIF2 clock.
65	GPIO[10]/SSSTAT2	I/O	Hu	13Xs	GPIO[10] or SSIF2 status.
66	VDRAM	–	–	–	DRAM battery power.
67	RASn	O	–	13Xs	(Batt. Pwr.) DRAM row address select.
68	CAS[1]n	O	–	13Xs	(Batt. Pwr.) DRAM column address select.
69	CAS[0]n	O	–	13Xs	(Batt. Pwr.) DRAM column address select.
70	DWRn	O	–	13Xs	(Batt. Pwr.) DRAM write.
71	VBAT	–	–	–	Battery power.
72	XIN	I	Osc1	–	(Batt. Pwr.) 32.768kHz Crystal Oscillator input.
73	XOUT	O	–	Osc1	(Batt. Pwr.) 32.768kHz Crystal Oscillator output.
74	WRPROTn	O	–	1XC	(Batt. Pwr.) Write protect during loss of VDD power.
75	CS0n	O	–	13Xs	(Battery Powered) SRAM Chip select.
76	TEST[1]	I	Hd	–	(Batt. Pwr.) Test mode.
77	TEST[0]	I	Hd	–	(Batt. Pwr.) Test mode.
78	BATRSTn	I	H	–	(Batt. Pwr.) Battery power reset input.
79	INTPWRDWNEn	I	H	–	(Batt. Pwr.) Internal power down select signal.
80	PWRDWNn	I/O	H	13Xs	(Batt. Pwr.) Indicates a prime power loss from ext./internal source (mode dependent).
81	NC	I	Analog	–	No Connection.
82	ADGA	–	VADG	–	A/D analog ground.
83	VREFn/CLREF	I	VR-	–	Negative reference voltage for Video A/D.
84	VIN	I	VA	–	Analog Video A/D input.
85	ADGA	–	VADG	–	A/D analog ground.
86	ADVA	–	VADV	–	A/D analog power.
87	ADXG	–	VXG	–	A/D internal ground.
88	VREFp	I	VR	–	Positive reference voltage for Video A/D.
89	IVREFn	I	VR-	–	Internal negative reference voltage for A/D.
90	IVREFp	I	VR+	–	Internal positive reference voltage for A/D.
91	VDD	–	–	–	Digital power.
92	THADI	I	Analog	–	Analog Thermal A/D input.
93	OPO[7]/GPO[15]	O	–	13Xs	Keyboard LED strobe 7 or GPO[15].
94	OPO[6]/GPO[14]	O	–	13Xs	Keyboard LED strobe 6 or GPO[14].
95	OPO[5]/GPO[13]	O	–	13Xs	Keyboard LED strobe 5 or GPO[13].
96	OPO[4]/GPO[12]/SSTXD1	O	–	13Xs	Keyboard LED strobe 4 or GPO[12] or transmit data for SSIF1.
97	OPO[3]/GPO[11]	O	–	13Xs	Keyboard LED strobe 3 or GPO[11].
98	OPO[2]/GPO[10]/RINGER	OZ	–	13Xs	Keyboard LED strobe 2 or GPO[10] or ringer.
99	OPO[1]/GPO[9]/PMPWRCTRL	O	–	13Xs	Keyboard LED strobe 1 or GPO[9] or Printer motor power control.
100	OPO[0]/GPO[8]SMPWRCTRL	O	–	13Xs	Keyboard LED strobe 0 or GPO[8] or Stepper motor power control.
101	OPI[3]/GPIO[24]	I/O	Hu	13Xs	Keyboard return 3 or GPIO[24].
102	OPI[2]/GPIO[23]/SSCLK1	I/O	Hu	13Xs	Keyboard return 2 or GPIO[23] or SSIF1 clock.
103	OPI[1]/GPIO[22]/SSSTAT1	I/O	Hu	13Xs	Keyboard return 1 or GPIO[22] or SSIF1 status.
104	OPI[0]/GPIO[21]/SSRXD1	I/O	Hu	13Xs	Keyboard return 0 or GPIO[21] or SSIF1 receive data.
105	RESETn	I/O	Hu	2XC	Chip reset.
106	VSS	–	–	–	Digital ground.
107	GPIO[18]/IRQ[9]n	I/O	Hu	13Xs	GPIO[18] or ext. interrupt priority 9.
108	GPIO[3]/SASCLK	I/O	Hu	13Xs	GPIO[3] or SASIF clock.
109	GPIO[2]/SASRXD	I/O	Hu	13Xs	GPIO[2] or SASIF receive data.
110	GPIO[1]/SASTXD	I/O	Hu	13Xs	GPIO[1] or SASIF transmit data.
111	GPIO[9]/FRDn	I/O	Hu	13Xs	GPIO[9] or flash read enable signal for NAND-type flash memory.
112	GPIO[8]/FWRn	I/O	Hu	13Xs	GPIO[8] or flash write enable signal for NAND-type flash memory.
113	FCSn[2]/VIDCTL[1]/GPO[22]	O	–	13Xs	Flash memory chip select 2 or video control signal 1 or GPO[22].
114	FCSn[1]/VIDCTL[0]/GPO[23]	O	–	13Xs	Flash memory chip select 1 or video control signal 1 or GPO[23].
115	CLK2/GPO[24]	O	–	13Xs	Scanner reset gate control (or clock for CIS scanner) or GPO[24].
116	CLK1n/GPO[25]	O	–	13Xs	Scanner clock-inverted or GPO[25].
117	CLK1	O	–	2XC	Scanner clock.
118	START	O	–	2XC	Scanner shift gate control.
119	VDD	–	–	–	Digital power.
120	TONE	O	–	Analog	Analog tone output.
121	VSS	–	–	–	Digitai ground.
122	GPIO[25]/STROBEN	I/O	Hu	13Xs	GPIO[25] or P1284 input from host.
123	GPIO[26]/AUTOFDN	I/O	Hu	13Xs	GPIO[26] or P1284 input from host.
124	GPIO[27]/INITN	I/O	Hu	13Xs	GPIO[27] or P1284 input from host.
125	GPIO[28]/SLCTINN	I/O	Hu	13Xs	GPIO[28] or P1284 input from host.
126	GPIO[26]/ACKN	O	–	13Xs	GPIO[26] or P1284 returned status to host.

SCE114 (IC9) Terminal descriptions

Pin No.	Pin List	I/O	Input Type	Output Type	Pin Description
127	GPO[27]/BUSY	O	–	13Xs	GPO[27] or P1284 returned status to host.
128	GPO[28]/PERROR	O	–	13Xs	GPO[28] or P1284 returned status to host.
129	GPO[29]/SLCTOUT	O	–	13Xs	GPO[29] or P1284 returned status to host.
130	GPO[30]/FAULTN	O	–	13Xs	GPO[30] or P1284 returned status to host.
131	GPIO[29]/PIOD[0]	I/O	Hu	13Xs	GPO[29] or P1284 data or address driven by asic or host (mode dependent).
132	GPIO[30]/PIOD[1]	I/O	Hu	13Xs	GPO[30] or P1284 data or address driven by asic or host (mode dependent).
133	GPIO[31]/PIOD[2]	I/O	Hu	13Xs	GPO[31] or P1284 data or address driven by asic or host (mode dependent).
134	GPIO[32]/PIOD[3]	I/O	Hu	13Xs	GPO[32] or P1284 data or address driven by asic or host (mode dependent).
135	GPIO[33]/PIOD[4]	I/O	Hu	13Xs	GPO[33] or P1284 data or address driven by asic or host (mode dependent).
136	GPIO[34]/PIOD[5]	I/O	Hu	13Xs	GPO[34] or P1284 data or address driven by asic or host (mode dependent).
137	GPIO[35]/PIOD[6]	I/O	Hu	13Xs	GPO[35] or P1284 data or address driven by asic or host (mode dependent).
138	GPIO[36]/PIOD[7]	I/O	Hu	13Xs	GPO[36] or P1284 data or address driven by asic or host (mode dependent).
139	VDD	–	–	–	Digitai power.
140	GPIO[0]/SR4IN	I/O	Hu	13Xs	GPIO[0] or from secondary EXTIA SOUT to DSP.
141	GPO[31]/SR3OUT	O	–	13Xs	GPO[31] or a signal to the secondary ext. IA (SIN pin) from the DSP.
142	GPIO[37]/IRQ15n	I/O	Hu	13Xs	GPIO[37] or a signal from the ext. IA to a DSP status register.
143	IARESET	O	–	13Xs	A reset from the DSP to the ext. IA (POR pin).
144	IACLK/DSPCSn	O	–	13Xs	A signal from the DSP to the ext. IA (MCLK pin) or ext. modem chip select.
145	IA1CLK	I/O	H	13Xs	A signal from the ext. IA (ICLK pin) to the DSP.
146	SR3IN/DSPIRGn	I	H	13Xs	A signal from the primary ext. IA (SOUT pin) to the DSP or ext. modem interrupt input.
147	SR4OUT	O	–	13Xs	A signal to the primary ext. IA (SIN pin) from the DSP.
148	SR1IO	I/O	H	13Xs	A signal to the ext. IA (CTRL1 pin) from the DSP.
149	SA1CLK	I/O	H	13Xs	A signal from the ext. IA (FSYNC pin) to the DSP.
150	VSSPLL	–	–	–	Ground for PLL.
151	TSTCLK	O	–	13Xs	Test clock, used to synchronize ext. logic.
152	DEBUGn	I	Hu	–	External non-maskable input (NMI).
153	RDn	O	–	13Xs	Read strobe.
154	WRn	O	–	13Xs	Write strobe.
155	SYNC/GPO[20]	I/O	Hu	13Xs	Indicates a CPU op code fetch cycle or GPO[20].
156	ROMCSn	O	–	13Xs	ROM chip select.
157	CS1n/GPO[21]	O	–	13Xs	I/O chip select or GPO[21].
158	VSS	–	–	–	Digital ground.
159	SXIN	I	OSC0	–	32.256MHz crystal oscillator input.
160	SXOUT	O	–	OSC0	32.256MHz crystal oscillator output.
161	VDD	–	–	–	Digital power.
162	PM[3]/GPO[3]	O	–	13Xs	Programmable print motor control pin or GPO[3].
163	PM[2]/GPO[2]	O	–	13Xs	Programmable print motor control pin or GPO[2].
164	PM[1]/GPO[1]	O	–	13Xs	Programmable print motor control pin or GPO[1].
165	PM[0]/GPO[0]	O	–	13Xs	Programmable print motor control pin or GPO[0].
166	SM[3]/GPO[7]	O	–	13Xs	Programmable scan motor control pin or GPO[7].
167	SM[2]/GPO[6]	O	–	13Xs	Programmable scan motor control pin or GPO[6].
168	SM[1]/GPO[5]	O	–	13Xs	Programmable scan motor control pin or GPO[5].
169	SM[0]/GPO[4]	O	–	13Xs	Programmable scan motor control pin or GPO[4].
170	REGDMA/GPO[18]/CLKConfig[0]	O	–	13Xs	Register select cycle/dma cycle or GPO[18] and sxin clock divider config. during reset.
171	WAITn/GPO[19]/CLKConfig[1]	I/O	Hu	13Xs	Wait state/halt state indication or GPO[19] and sxin lock divider config. during reset.
172	VDDPLL	–	–	–	Power for PLL.
173	D[7]	I/O	Tu	13Xs	CPU data bus.
174	D[6]	I/O	Tu	13Xs	CPU data bus.
175	D[5]	I/O	Tu	13Xs	CPU data bus.
176	D[4]	I/O	Tu	13Xs	CPU data bus.

(2) Panel control block

The following controls are performed by the SCE114.

- Operation panel key scanning
- Operation panel LCD display

(3) Mechanism/recording control block

- Recording control block diagram (1)

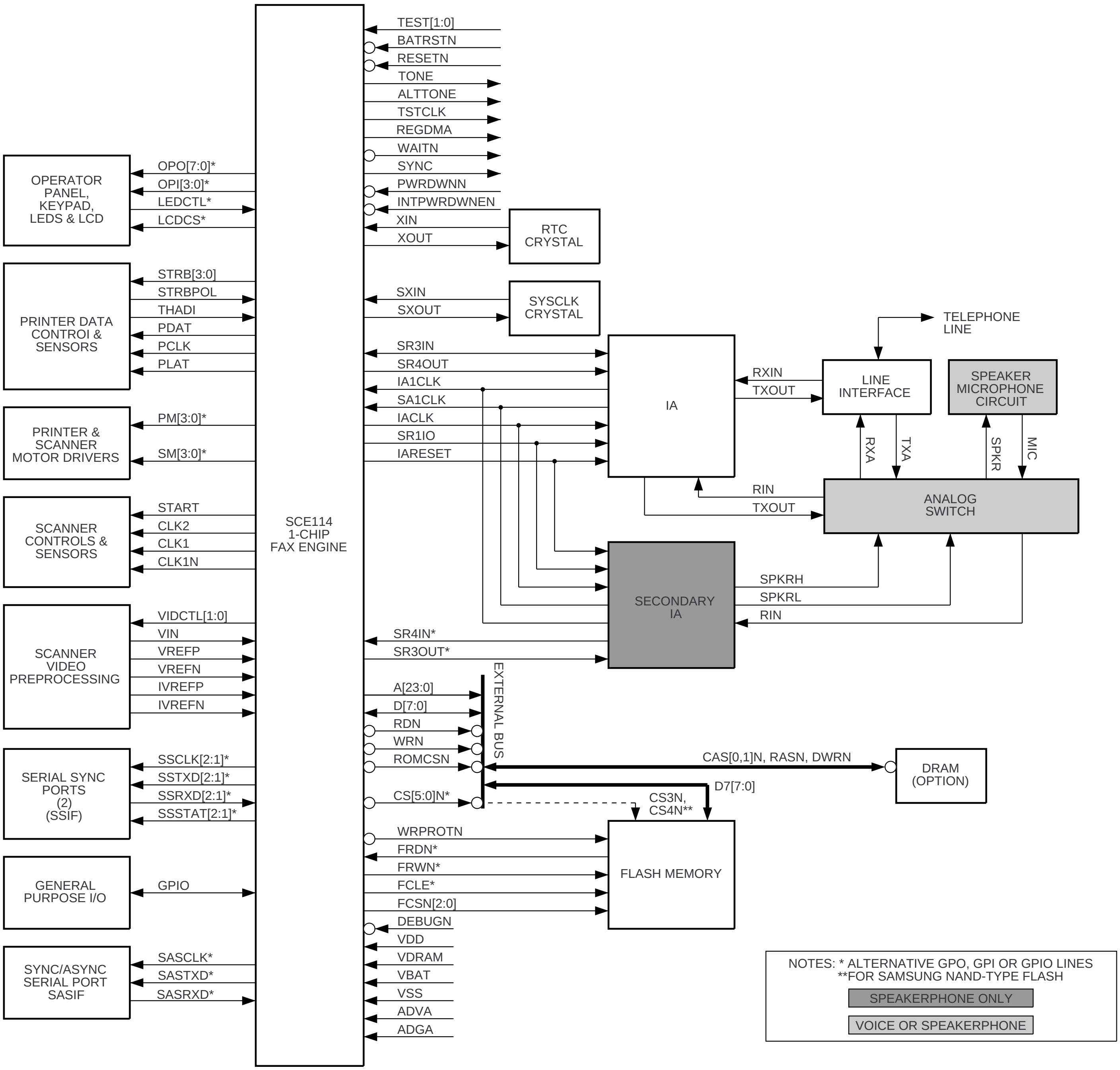


Fig. 4

(4) Modem (SCE114/20415) block

INTRODUCTION

The CONEXANT SCE114 modem is a synchronous 14400 bits per second (bps) half-duplex modem with error detection and DTMF reception. It has low power consumption and requires +5V and +3.3V DC power supply.
The modem can operate over the public switched telephone network (PSTN) through line terminations provided by a data access arrangement (DAA).
The SCE114 is designed for use in Group 3 facsimile machines.
The modem satisfies the requirements specified in ITU-T recommendations V.17, V.29, V.27 ter, V.21 Channel 2 and T.4, and meets the binary signaling requirements of T.30.
The modem can operate at 14400, 12000, 9600, 7200, 4800, 2400, or 300 bps, and also includes the V.27 ter short training sequence option.
The modem can also perform HDLC framing according to T.30 at 9600, 7200, 4800, 2400, or 300 bps.
The modem features a programmable DTMF receiver and three programmable tone detectors which operate concurrently with the V.21 channel 2 receiver.
The voice mode allows the host computer to efficiently transmit and receive audio signals and messages.

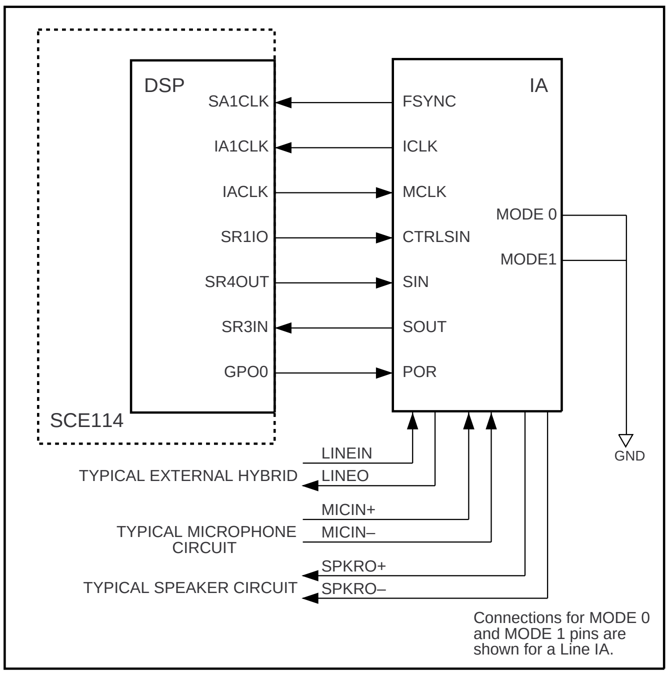


Fig. 5

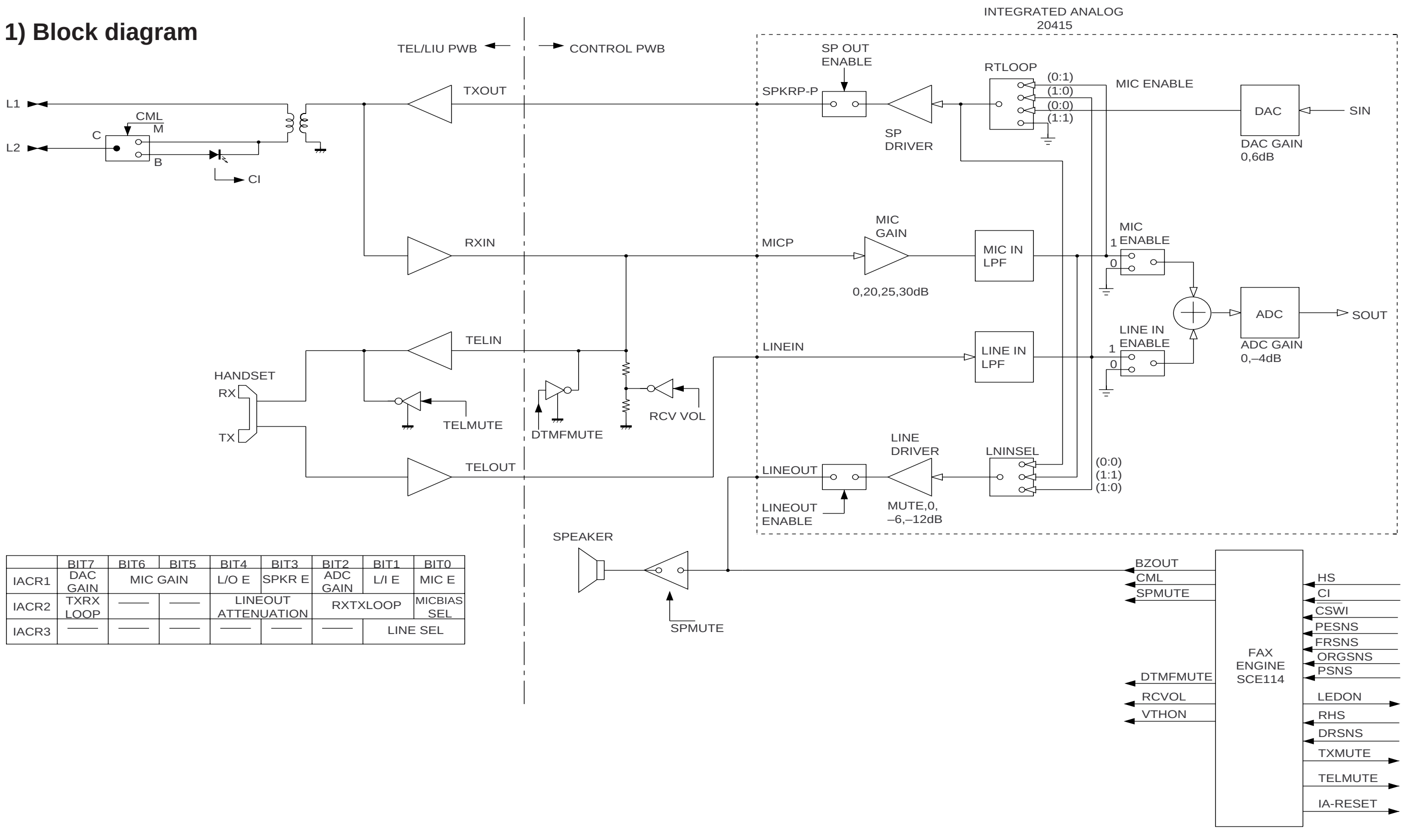
FEATURES

- Group 3 facsimile transmission/reception
  - ITU-T V.17, V.33, V.29, V.27 ter, T.30, V.21 Channel 2, T.4
  - ITU-T V.17 and V.27 ter short train
  - HDLC framing at all speeds
  - Receive dynamic range: 0 dBm to -43 dBm
  - Automatic adaptive equalization
  - Fixed and programmable digital compromise equalization
  - DTMF detect and tone detect
  - ITU-T V.21 Channel 2 FSK 7E Flag Detect
  - Ring detector
  - Programmable transmits level
  - Programmable single/dual tone transmission
- V.23 and Type I Caller ID
  - Full-duplex modes:
    TX = 75 bps. RX = 1200 bps
    TX = 1200 bps. RX = 75 bps
  - Half-duplex mode:
    TX = RX = 1200 bps
  - Serial and parallel data modes
  - Programmable parallel data mode
  - 5, 6, 7 or 8 data bits
  - 1 or 2 Stop bits
  - Mark, Space, Even, or Odd Parity
  - Break function
  - Transmitter squelch
  - Compromise equalizer
- Programmable interface memory interrupt
- Eight General Purpose Input (GPI) and eight General Purpose Output (GPO) pins for host assignment
- DTE interface: two alternate ports
  - Selectable microprocessor bus (6500 or 8085)
  - ITU-T V.24 (EIA/TIA-232-E compatible) interface
- TTL and CMOS compatible
- 3.3V/5V operation
- Power consumption
  - Operating Mode: 200 mW (Basic), 275 mW (-V option). 300 mW (-VS option)
  - Sleep Mode: 1 ma (Basic. -V option and -VS option)

[3] Circuit description of TEL/LIU PWB

(1) TEL/LIU block operational description

1) Block diagram



	BIT7	BIT6	BIT5	BIT4	BIT3	BIT2	BIT1	BIT0
IACR1	DAC GAIN	MIC GAIN		L/O E	SPKR E	ADC GAIN	L/I E	MIC E
IACR2	TXRX LOOP	——	——	LINEOUT ATTENUATION		RXTXLOOP		MICBIAS SEL
IACR3	——	——	——	——	——	——	LINE SEL	

Fig. 6

2) Circuit description

The TEL/LIU PWB is composed of the following 7 blocks.

1. Speech circuit section
2. Dial transmission section
3. Speaker amplifier section
4. Ringer circuit section
5. Externally connected TEL OFF HOOK detection circuit
6. CI detection circuit
7. Signal/DTMF transmission level & receiving level

3) Block description

1. Speech circuit section

- The receiver volume is an electronic volume type, this model is switched in 3 steps.

2. Dial transmission section

- D.P. transmission: The CML relay is turned on and off for control in the DP calling system. (Refer to the attached sheet.)
- DTM transmission: It is formed in the modem, and is output.

3. Speaker amplifier section

- Ringer volume :It is controlled by the combination of the attenuator value of the LINE DRIVER in the modem and the ringer sending level sent from the modem.
- Speaker volume :It is controlled by the attenuator value of the LINE DRIVER in the modem.

4. Ringer circuit section

- The ringer sound is formed in the tone of modem when CI signal is detected. The amplifier circuit drives the speaker of the main body.

5. Externally connected TEL OFF HOOK detection circuit section

- The circuit current detection is turned on together with OFF HOOK of main body or OFF HOOK of externally connected TEL. ON of CML OFF ($\overline{HS}$=L) is judged as OFF HOOK of externally connected TEL.

6. CI detection circuit

- CI is detected by the photo coupler which is integrated in series in the primary side TEL circuit well proven in the existing unit.

7. Signal/DTMF transmission level & receiving level

- Signal transmission level setting: ATT -10 dB Circuit output: -12 dBm.
- DTMF transmission level setting: HF -3.5 dBm LF -5.0 dBm
  Thus, set the level.

4) Signal selection

The following signals are used to control the transmission line of TEL/FAX signal. For details, refer to the signal selector matrix table.

[Control signals from output port]

<table>
<tr><th>Signal Name</th><th>Description</th></tr>
<tr><td>CML
(The circuit is located in the TEL/LIU PWB.)</td><td><u>Line connecting relay and DP generating relay</u>
H: Line make
L: Line break</td></tr>
<tr><td>SP MUTE
(The circuit is located in the TEL/LIU PWB.)</td><td><u>Speaker tone mute control signal</u>
H: Muting (Power down mode)
L: Muting cancel (Normal operation)</td></tr>
<tr><td>TEL MUTE</td><td><u>Handset reception mute control signal</u>
H: Muting
L: Muting cancel</td></tr>
<tr><td>RCVOL
DTMFMUTE
(The circuit is located in the control PWB.)</td><td><u>Handset receiver volume control signal</u>
<table>
<tr><td>Volume</td><td>High</td><td>Middle</td><td>Low</td><td>DTMF sending</td></tr>
<tr><td>RCVOL</td><td>L</td><td>H</td><td>L</td><td>L</td></tr>
<tr><td>DTMFMUTE</td><td>L</td><td>L</td><td>H</td><td>H</td></tr>
</table>
Note: The DTMF sending listed above is DTMF signal sending in the handset OFF-HOOK mode.</td></tr>
</table>

VOLUME SETTING		LINEOUT A		RCVOL	DTME
		(HIGH)	(LOW)		MUTE
Receiver volume setting	Low			0	1
	High			0	0
	Middle			1	0
DTMF Transmission volume setting (Receiver)	Fixed			0	1
Key buzzer volume setting	Fixed				
Speaker volume setting	Low	1	1		
	Middle	1	0		
	High	0	1		
Ringer volume setting	Low	1	1		
	Middle	1	0		
	High	0	1		
DTMF speaker volume setting	Low	1	1		
	Middle	1	0		
	High	0	1		

[Signals for status recognition according to input signals]

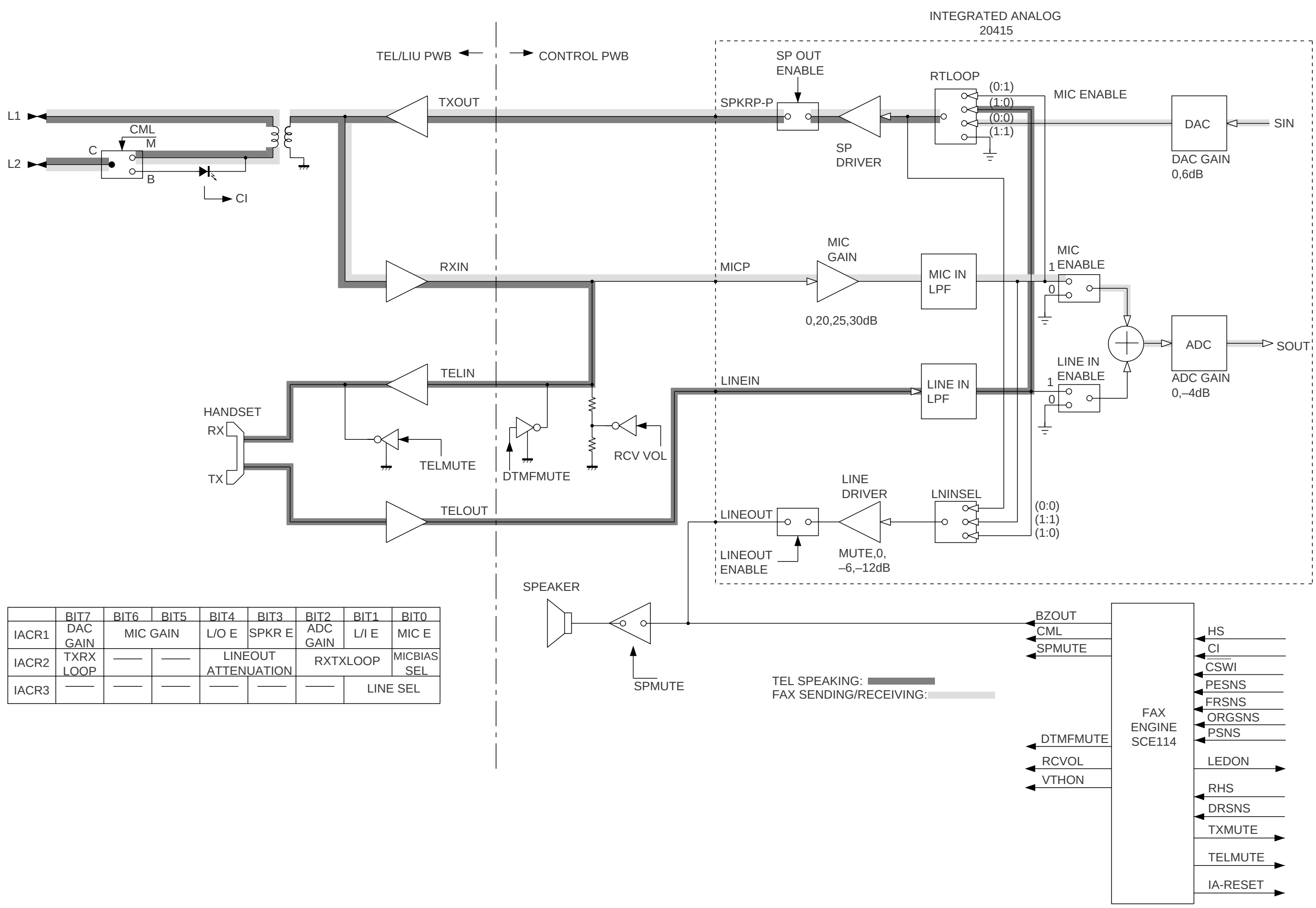
Signal Name	Function
$\overline{RHS}$	H: The handset is in the on-hook state. L: The handset is in the off-hook state.
CI	Incoming call (CI) detection signal
DRSNS	H: Door open. L: Door close.

No.	Signal Name (CNLIUA)	No.	Signal Name (CNLIUA)
1	PE1	8	TXOUT
2	TEL OUT	9	RXIN
3	TEL IN	10	$\overline{RHS}$
4	TEL MUTE	11	$\overline{DOOR\ SW}$
5	CI	12	+5V
6	HS	13	DG
7	CML	14	+24V

[Other signals]

Signal Name	Function
TEL IN	Receiving signal from line or modem
TEL OUT	Transfer signal to line
SPOUT	Speaker output signal
TXOUT	Transmission (DTMF) analog signal output from modem
RXIN	Reception (DTMF, others) analog signal input into modem

(Example: TEL speaking)



	BIT7	BIT6	BIT5	BIT4	BIT3	BIT2	BIT1	BIT0
IACR1	DAC GAIN	MIC GAIN		L/O E	SPKR E	ADC GAIN	L/I E	MIC E
IACR2	TXRX LOOP	——	——	LINEOUT ATTENUATION		RXTXLOOP		MICBIAS SEL
IACR3	——	——	——	——	——	——	LINE SEL	

Fig. 7

[4] Circuit description of power supply PWB

1. Block diagram

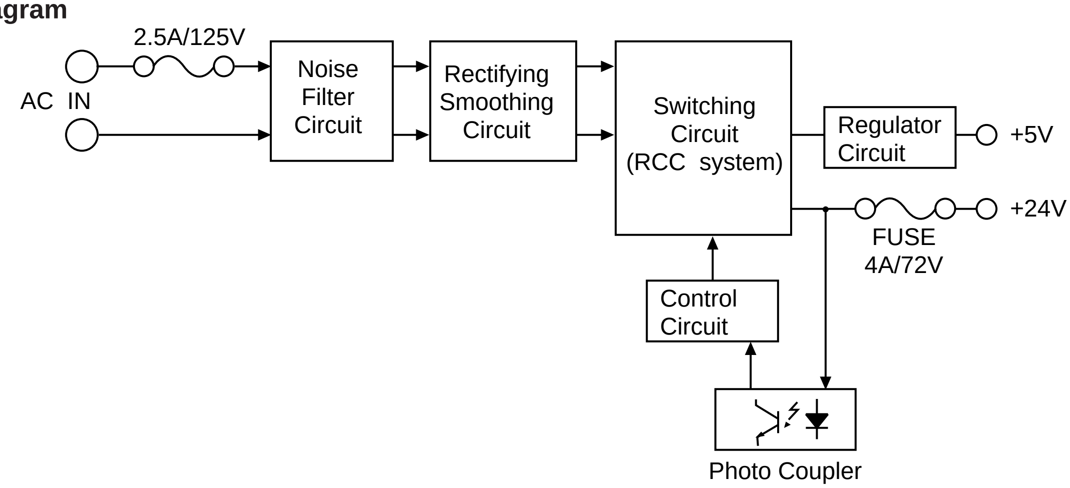


Fig. 8

2-1. Noise filter circuit

The input noise filter section is composed of L1 and C1, C15, which reduces normal mode noise from the AC line and common mode noise to the AC line.

2-2. Rectifying/smoothing circuit

The AC input voltage is rectified by diode stack DS1 and smoothed by capacitor C2 to supply DC voltage to the switching circuit section.

2-3. Switching circuit

This circuit includes MOS FET Q1 and the gate drive circuit, and components around Q1.

In this circuit, the DC voltage supplied from the rectifying/smoothing section is converted into high frequency pulses by ON/OFF repetition of Q1.

2-4. Control circuit

This circuit controls output voltage of +24V by adjusting ON period of Q1, looking at signal from photo coupler PC1.

In this operation IC1 takes charge of important part.

The over current protection is performed by bringing Q1 to OFF state through detection of voltage of T1 subwiding.

The over voltage protection is performed by operating the over current protection circuit through detection of zener diode ZD4 and short-circuiting of load.

2-5. +5V circuit

DC voltage supplied by rectifying the output of transformer T1 with diode D8 is stabilized by 3-terminal regulator IC1.

[5] Circuit description of CCD PWB

The CCD board picks up optical information from the document, converts it into an electrical (analog) signal and transfers it to the control board.

(1) Block diagram

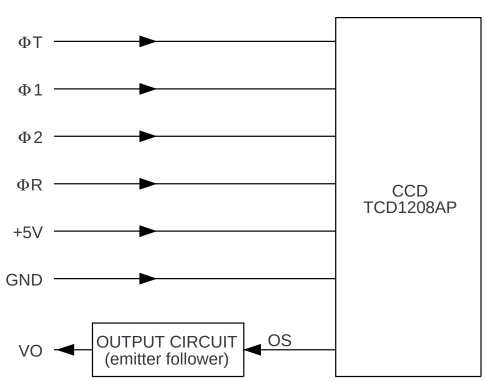


Fig. 9

(2) Description of blocks

1. CCD

The TCD1208AP is a highly sensitive charged coupled image sensor that consists of 2160 picture elements.

Receiving four drive signal (øT, ø2, ø1, øR) from the control board, the transferred photoelectric analog signal OS is impedance converted, and the signal VO, is supplied to the control board.

2. Waveforms

1. ø1, ø2 (=$\overline{ø1}$) signals within the control board.

2. OS ø

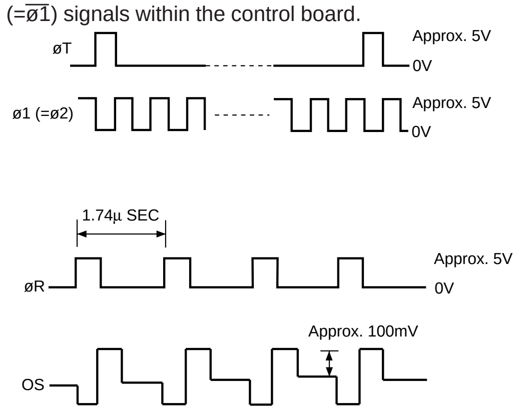
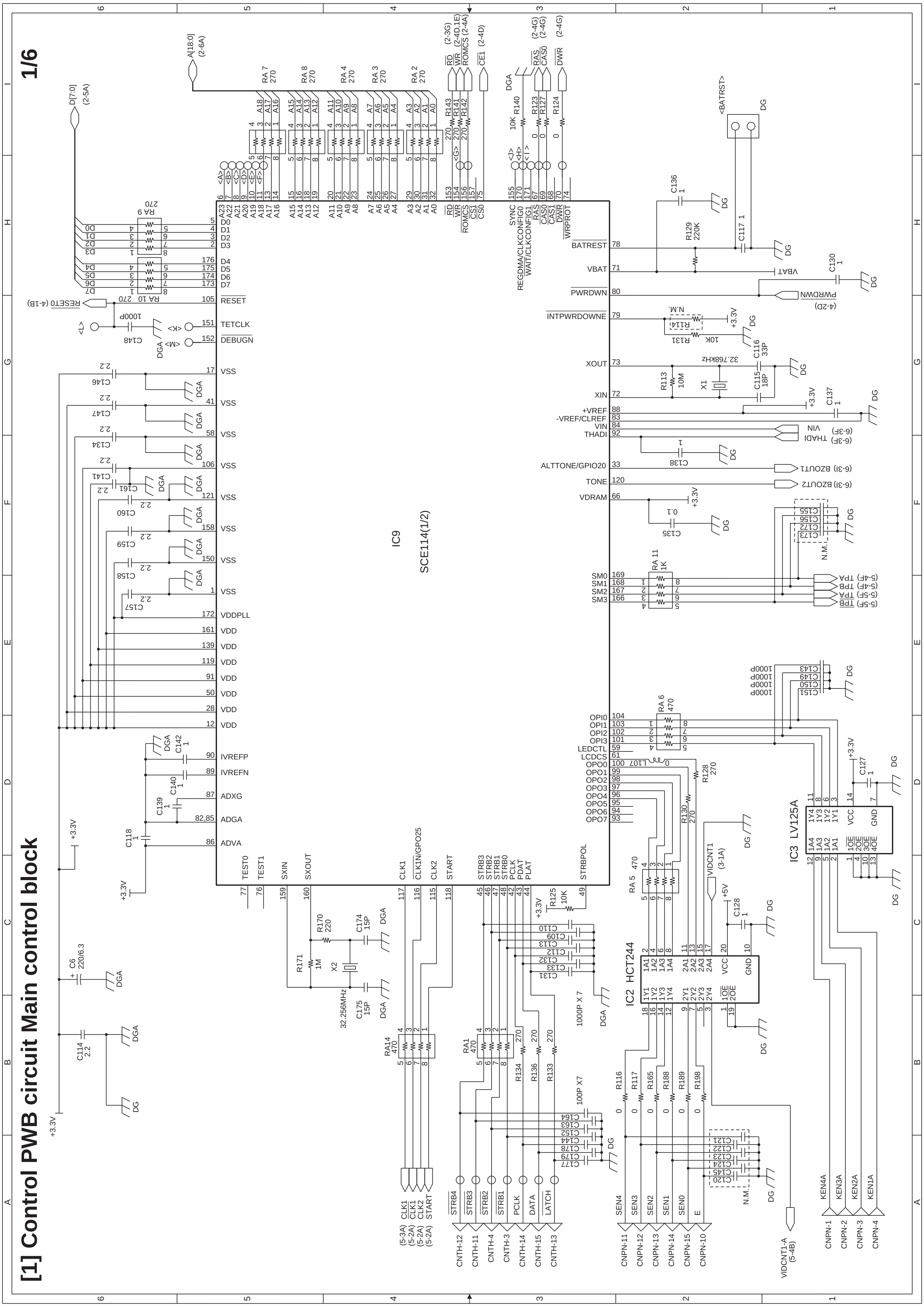
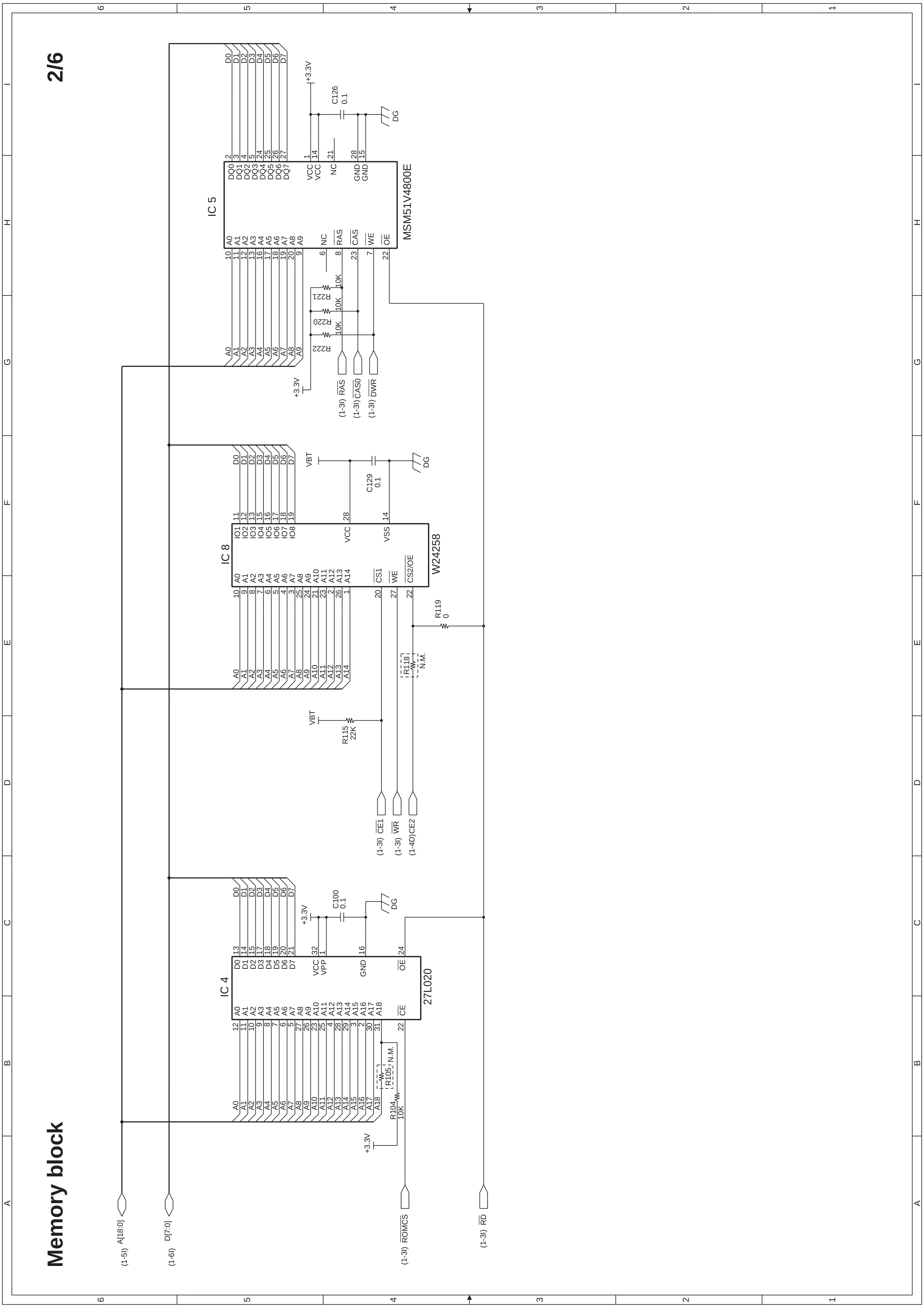
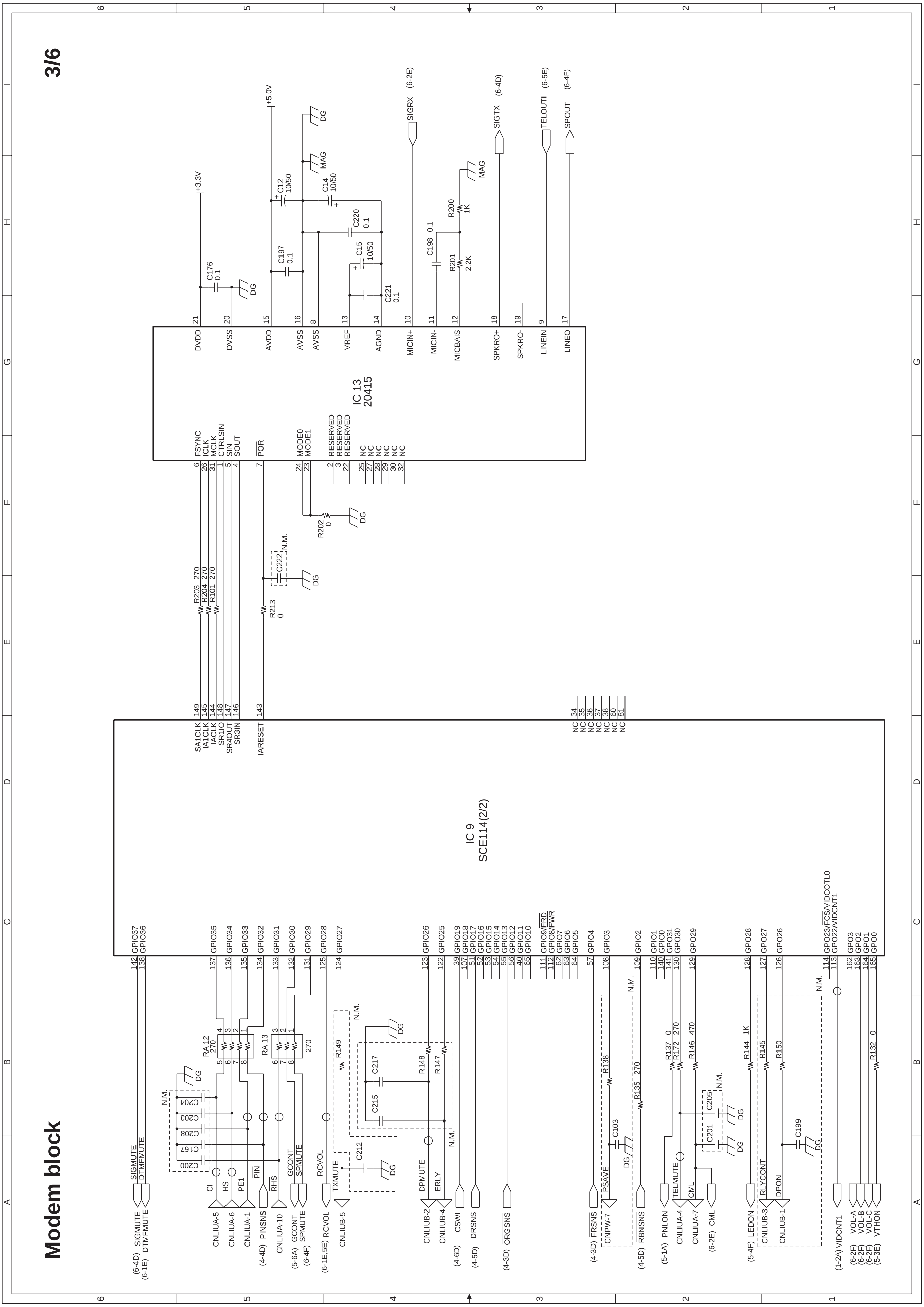


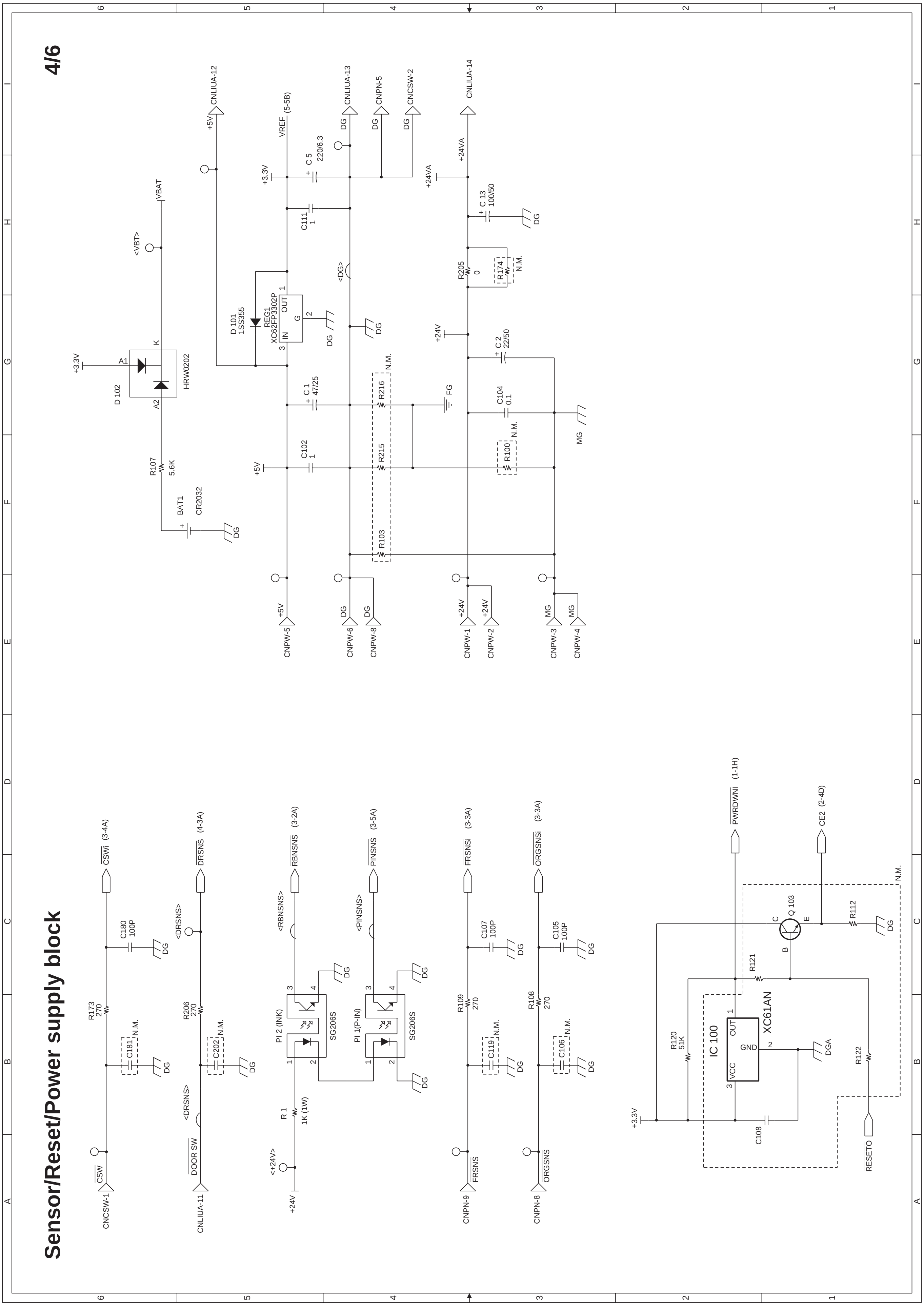
Fig. 10

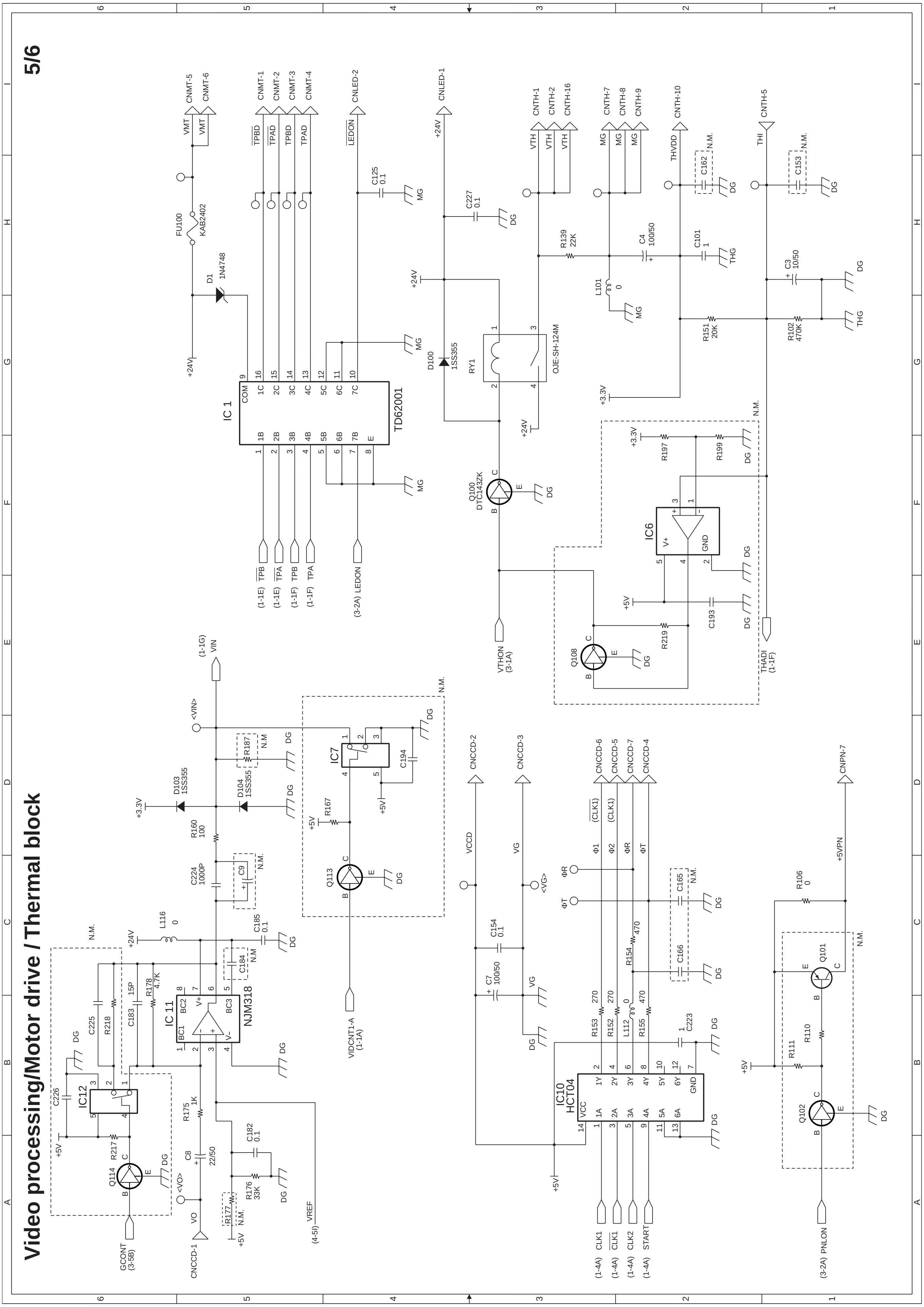
CHAPTER 6. CIRCUIT SCHEMATICS AND PARTS LAYOUT

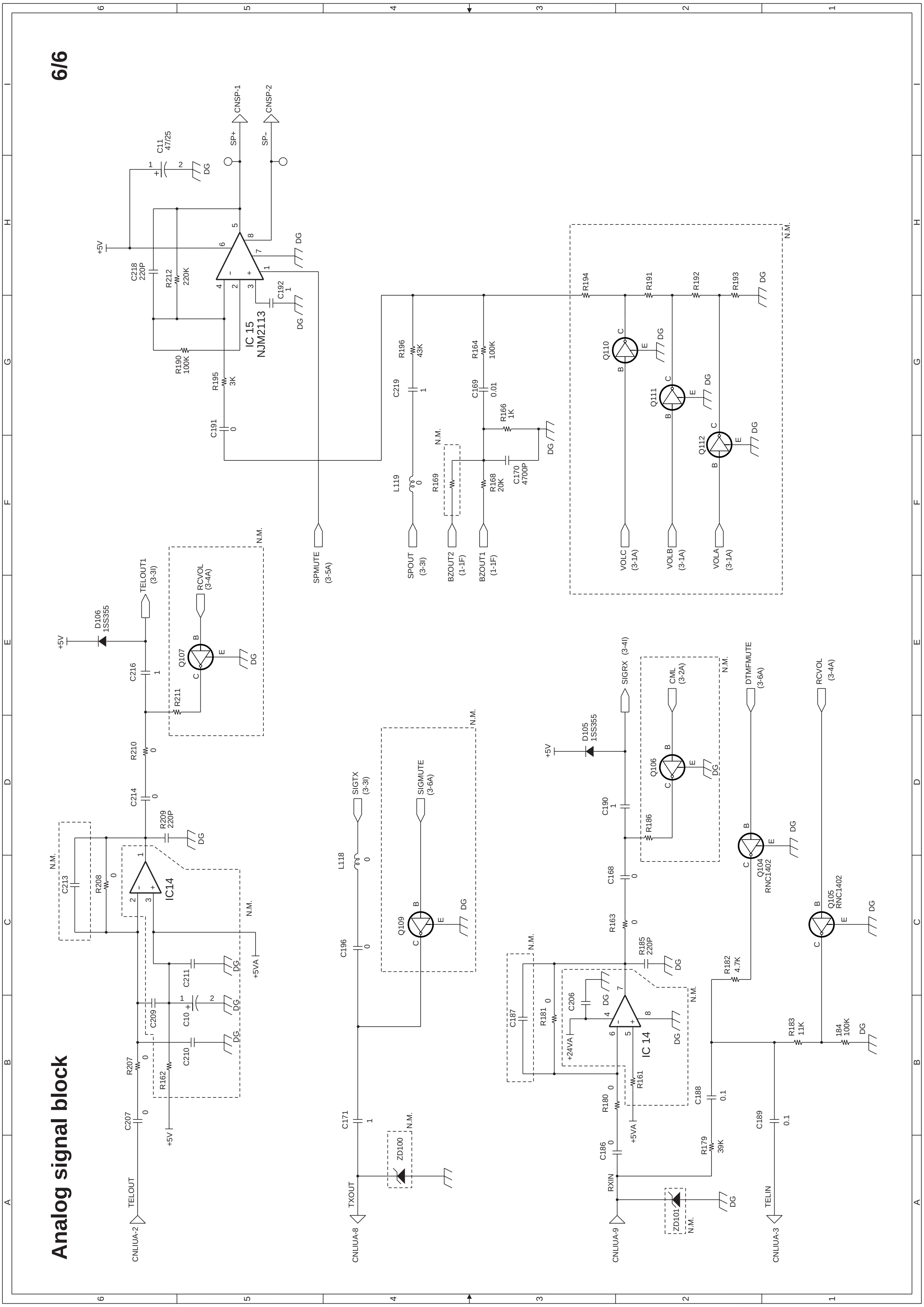



Memory block
2/6
IC 5
MSM51V4800E
IC 8
W24258
IC 4
27L020
C126 0.1
C129 0.1
C100 0.1
R221 10K
R220 10K
R222 10K
R119 0
R118 N.M.
R115 22K
R105 N.M.
R104 10K
+3.3V
VBT
DG
(1-3I) RAS
(1-3I) CAS0
(1-3I) DWR
(1-3I) CE1
(1-3I) WR
(1-4D)CE2
(1-5I) A[18:0]
(1-6I) D[7:0]
(1-3I) ROMCS
(1-3I) RD

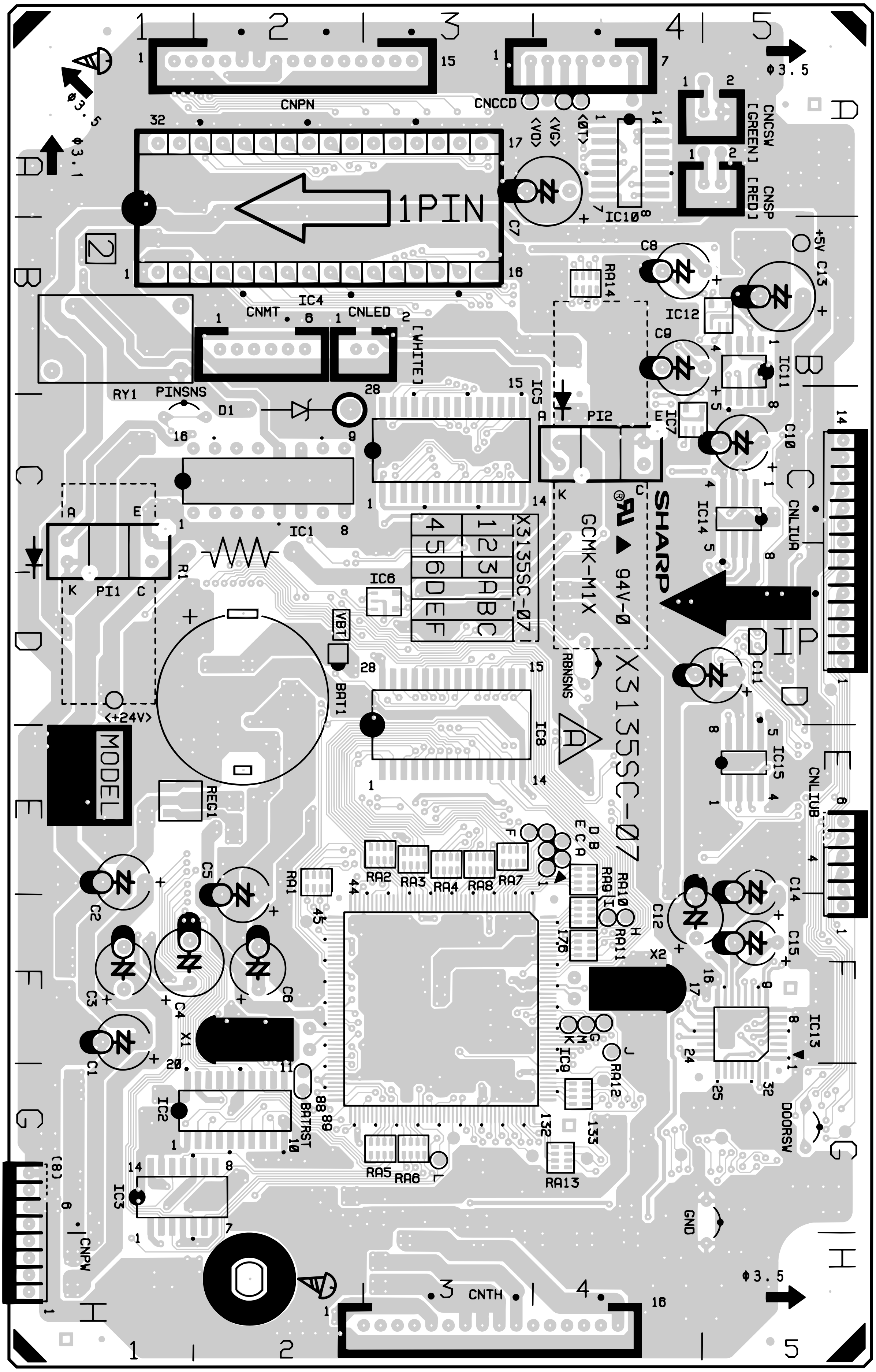

Modem block
3/6
IC 13
20415
IC 9
SCE114(2/2)


4/6
Sensor/Reset/Power supply block
CNLIUA-12
CNLIUA-13
CNPN-5
CNCSW-2
CNLIUA-14
VREF (5-5B)
+5V
+3.3V
+24VA
VBAT
<VBT>
<DG>
C 5 220/6.3
C111 1
C 13 100/50
R205 0
R174 N.M.
D 101 1SS355
REG1 XC62FP3302P
IN
OUT
G
+24V
C 2 22/50
D 102
HRW0202
A1
A2
K
C 1 47/25
R216 N.M.
FG
C104 0.1
MG
C102 1
R215
R100 N.M.
R107 5.6K
BAT1 CR2032
R103
DG
CNPW-5
CNPW-6
CNPW-8
CNPW-1
CNPW-2
CNPW-3
CNPW-4
CSWi (3-4A)
DRSNS (4-3A)
RBNSNS (3-2A)
PINSNS (3-5A)
FRSNSi (3-3A)
ORGSNSi (3-3A)
PWRDWNi (1-1H)
CE2 (2-4D)
<DRSNS>
<RBNSNS>
<PINSNS>
C180 100P
C107 100P
C105 100P
R173 270
R206 270
R109 270
R108 270
C181 N.M.
C202 N.M.
C119 N.M.
C106 N.M.
PI 2 (INK)
PI 1(P-IN)
SG206S
R 1 1K (1W)
<+24V>
CSW
CNCSW-1
DOOR SW
CNLIUA-11
FRSNS
CNPN-9
ORGSNS
CNPN-8
Q 103
R112
R121
R120 51K
IC 100
XC61AN
VCC
GND
DGA
R122
C108
RESETO

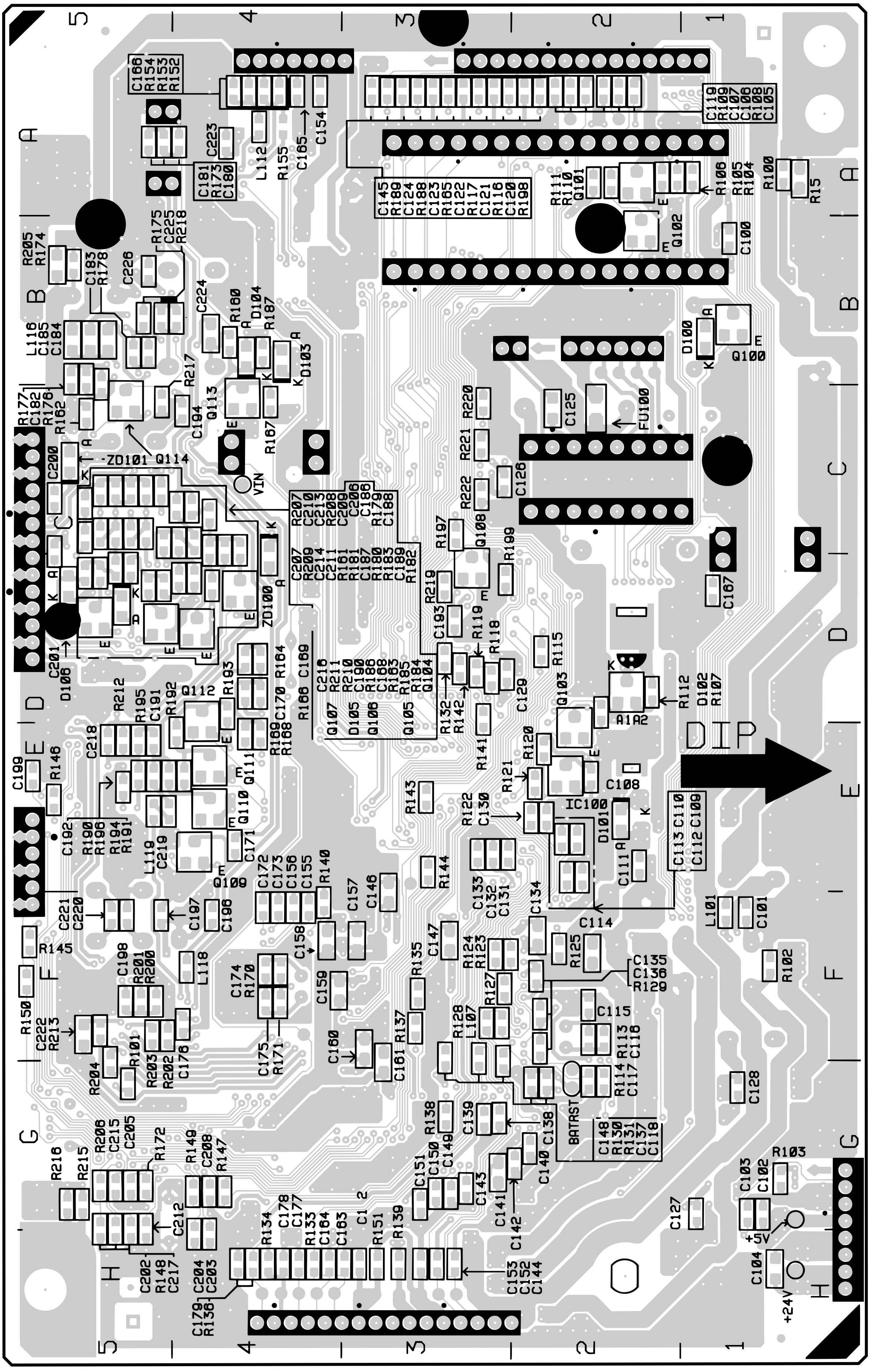

Video processing/Motor drive / Thermal block
5/6
IC 1
TD62001
IC6
IC7
IC10
HCT04
IC 11
NJM318
IC12
RY1
OJE-SH-124M


6/6
Analog signal block

Control PWB parts layout (Top side)

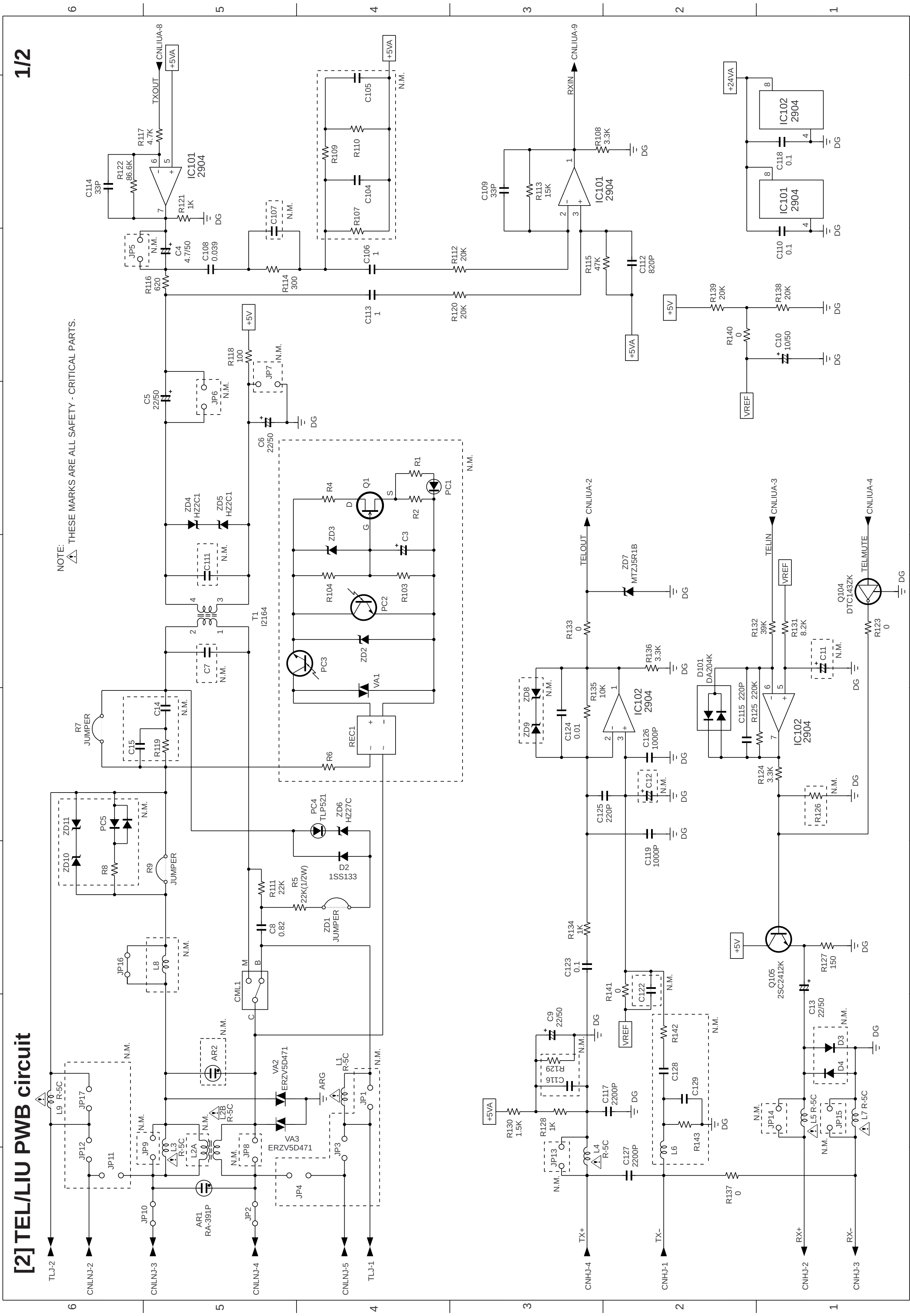


Control PWB parts layout (Bottom side)



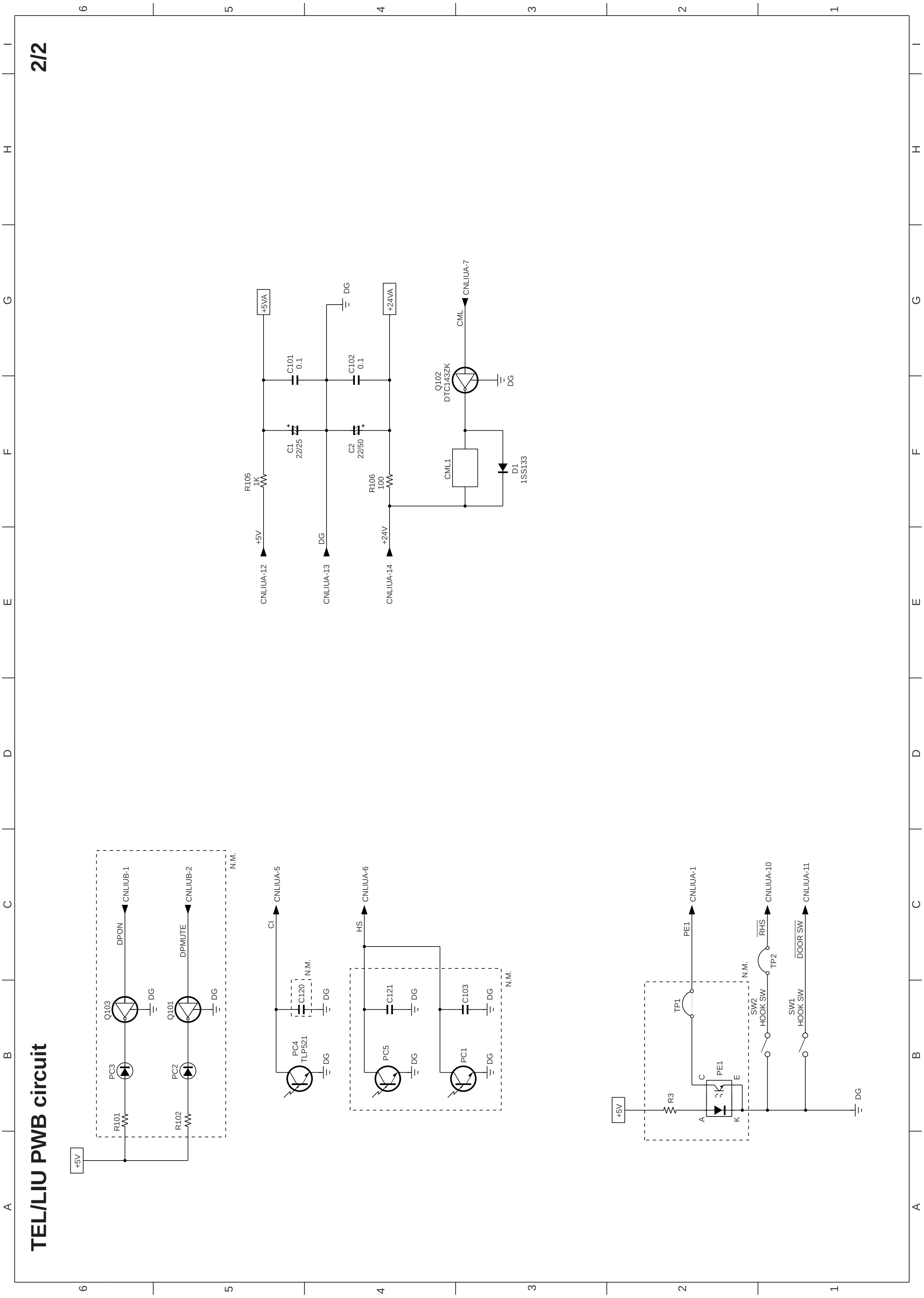
[2] TEL/LIU PWB circuit

1/2

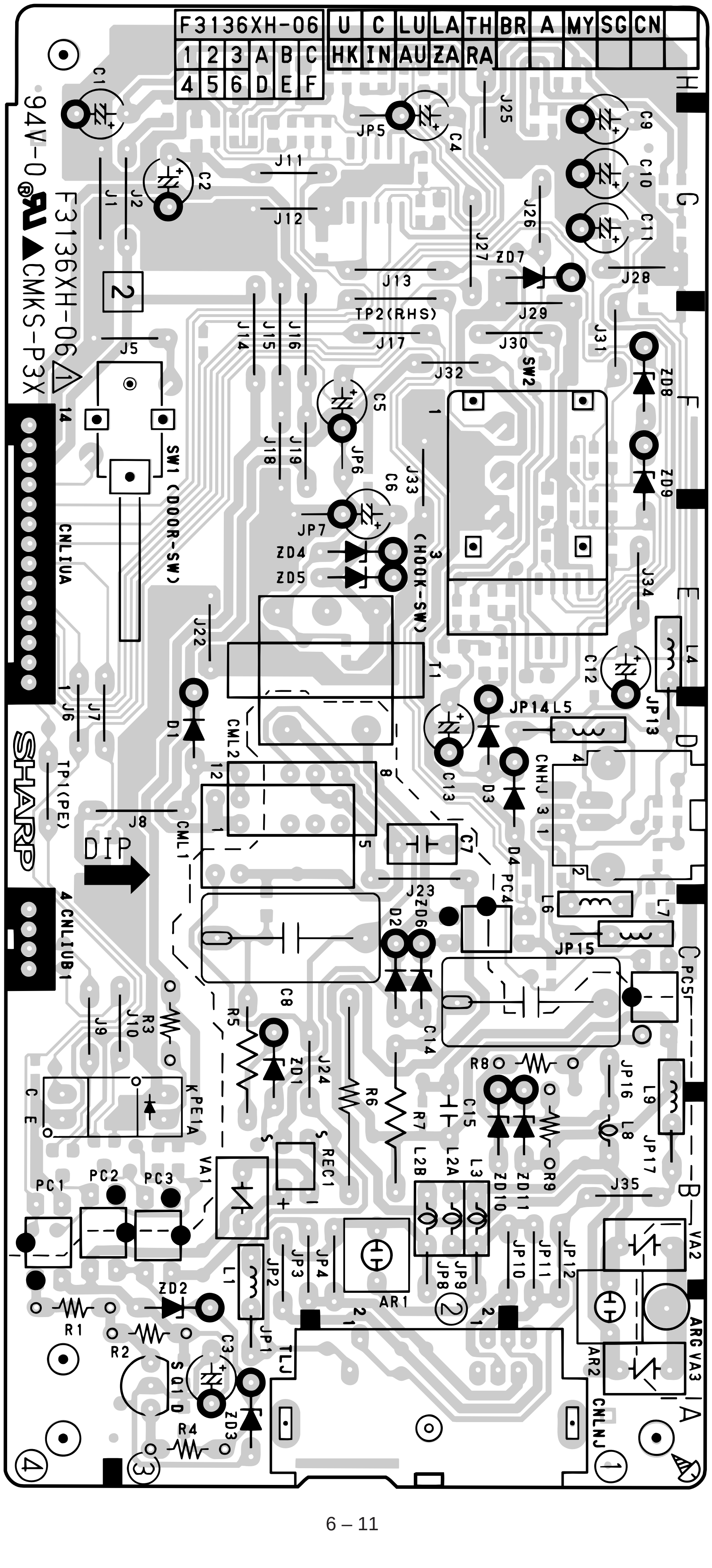


TEL/LIU PWB circuit

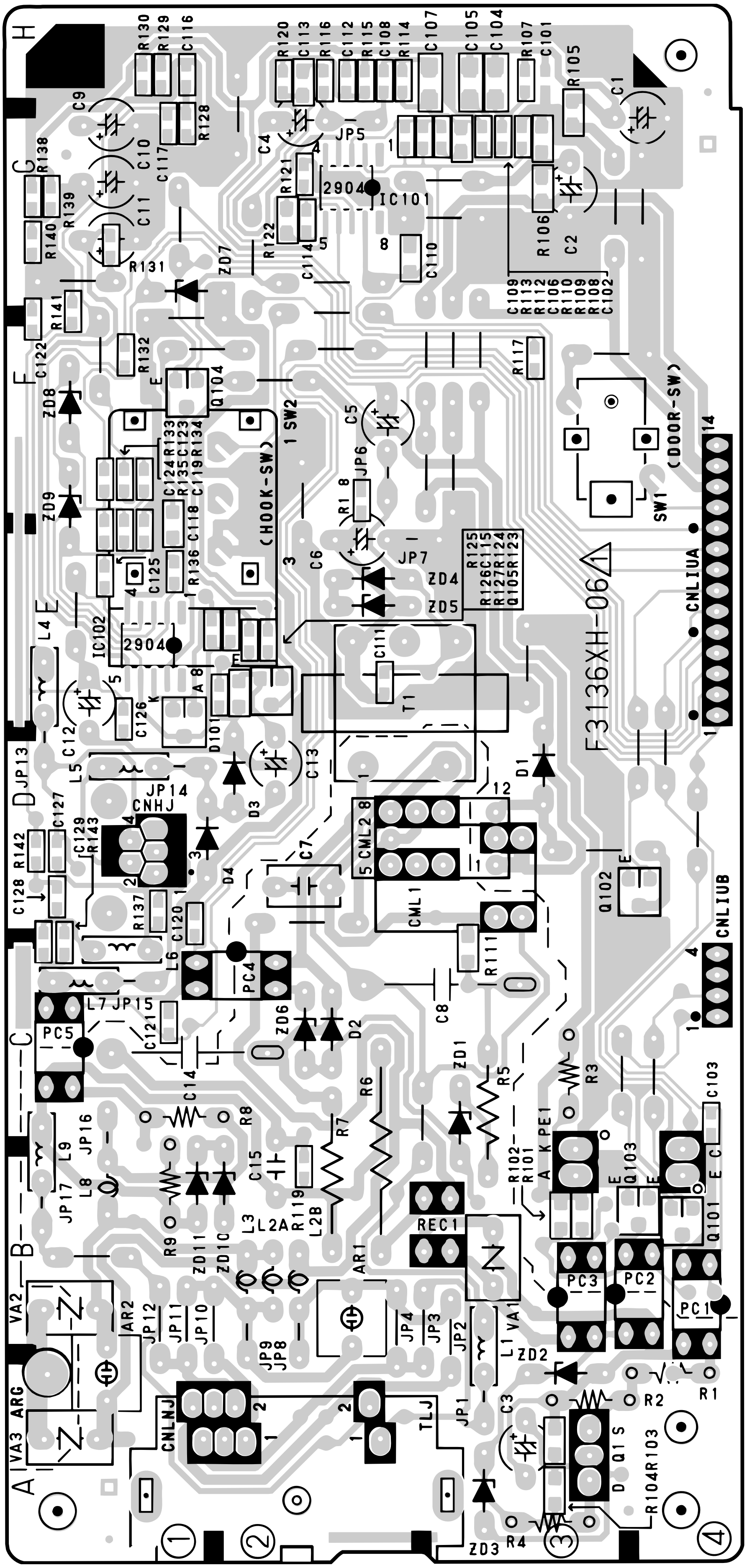
2/2



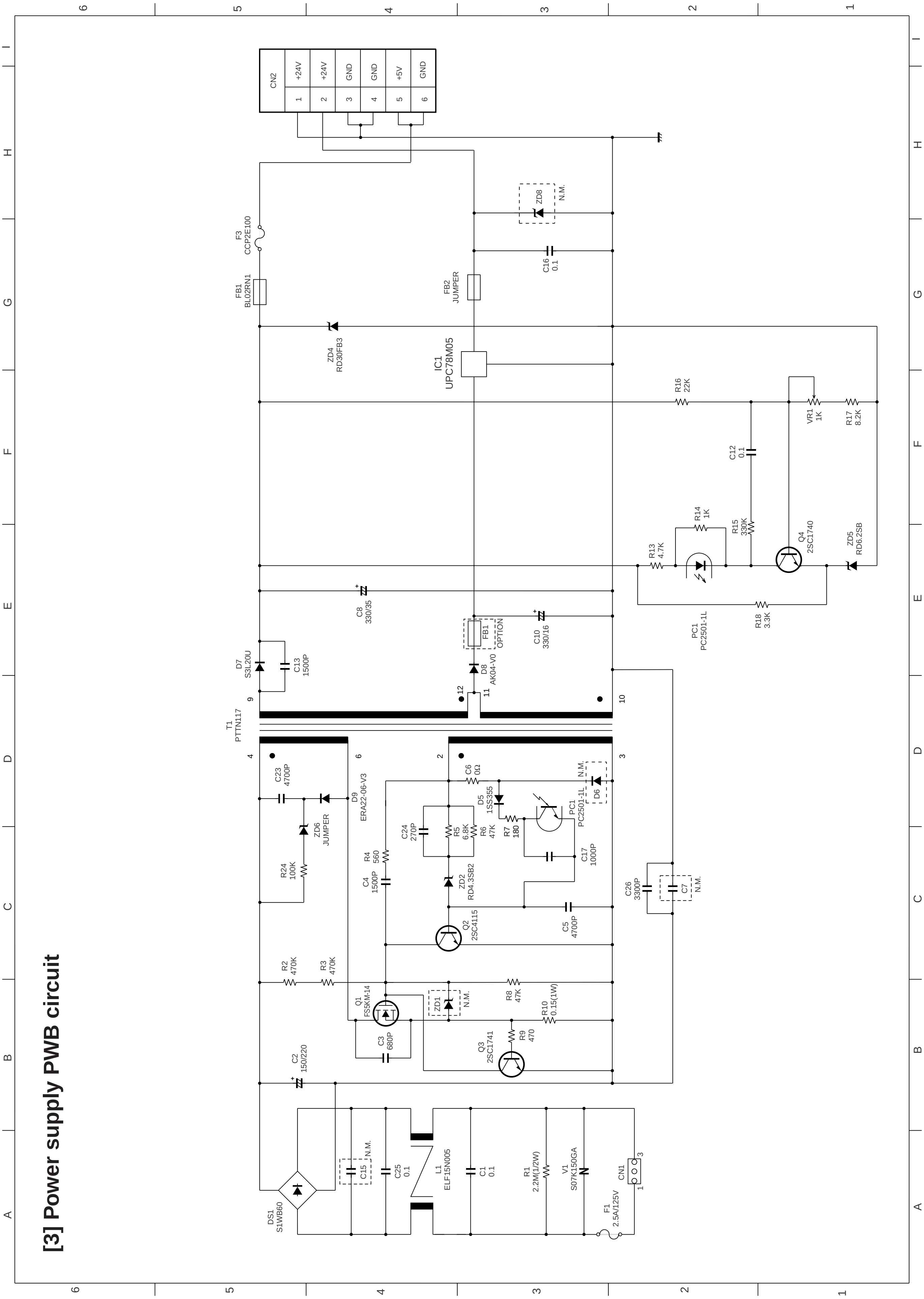
TEL/LIU PWB parts layout (Top side)



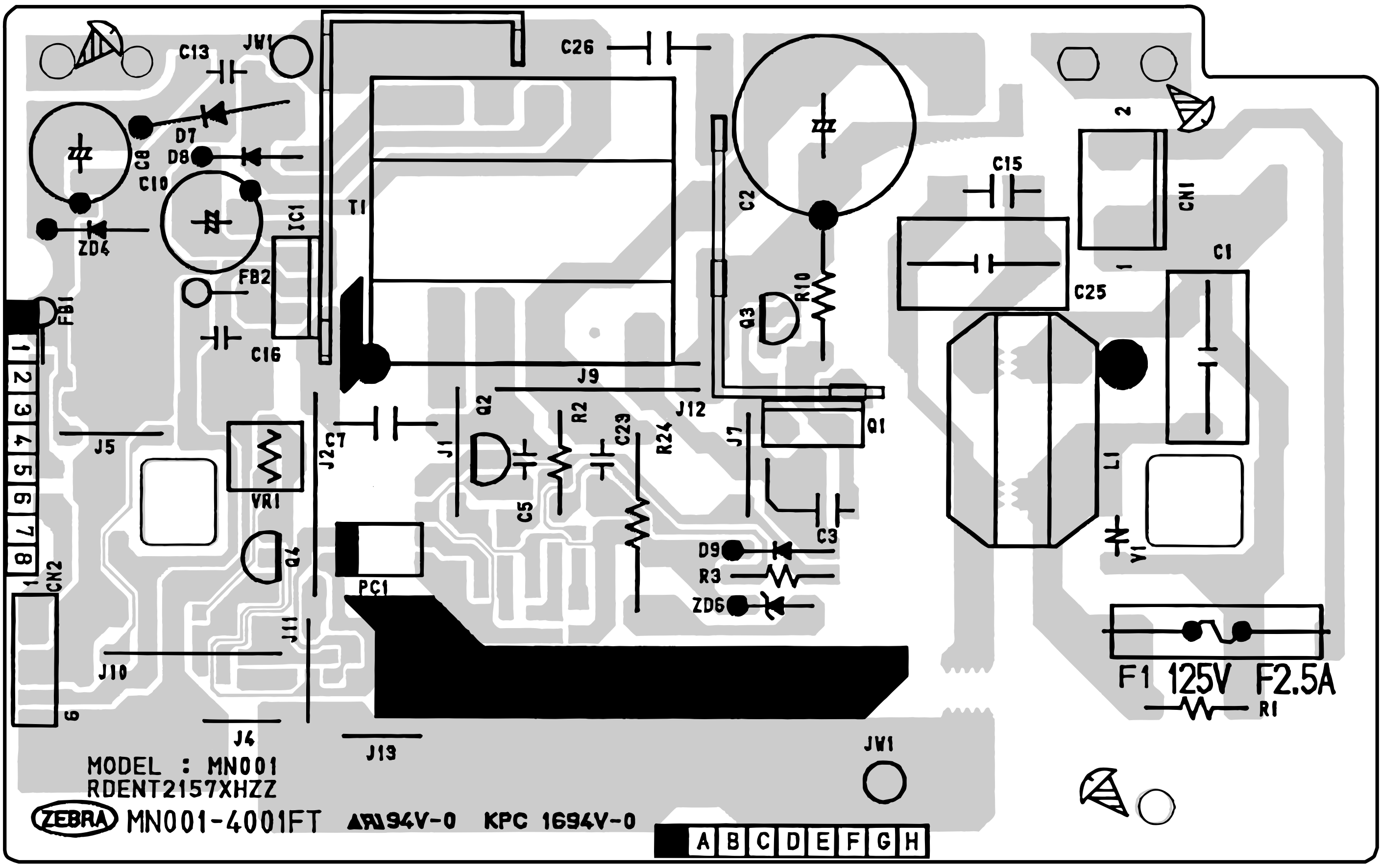
TEL/LIU PWB parts layout (Bottom side)



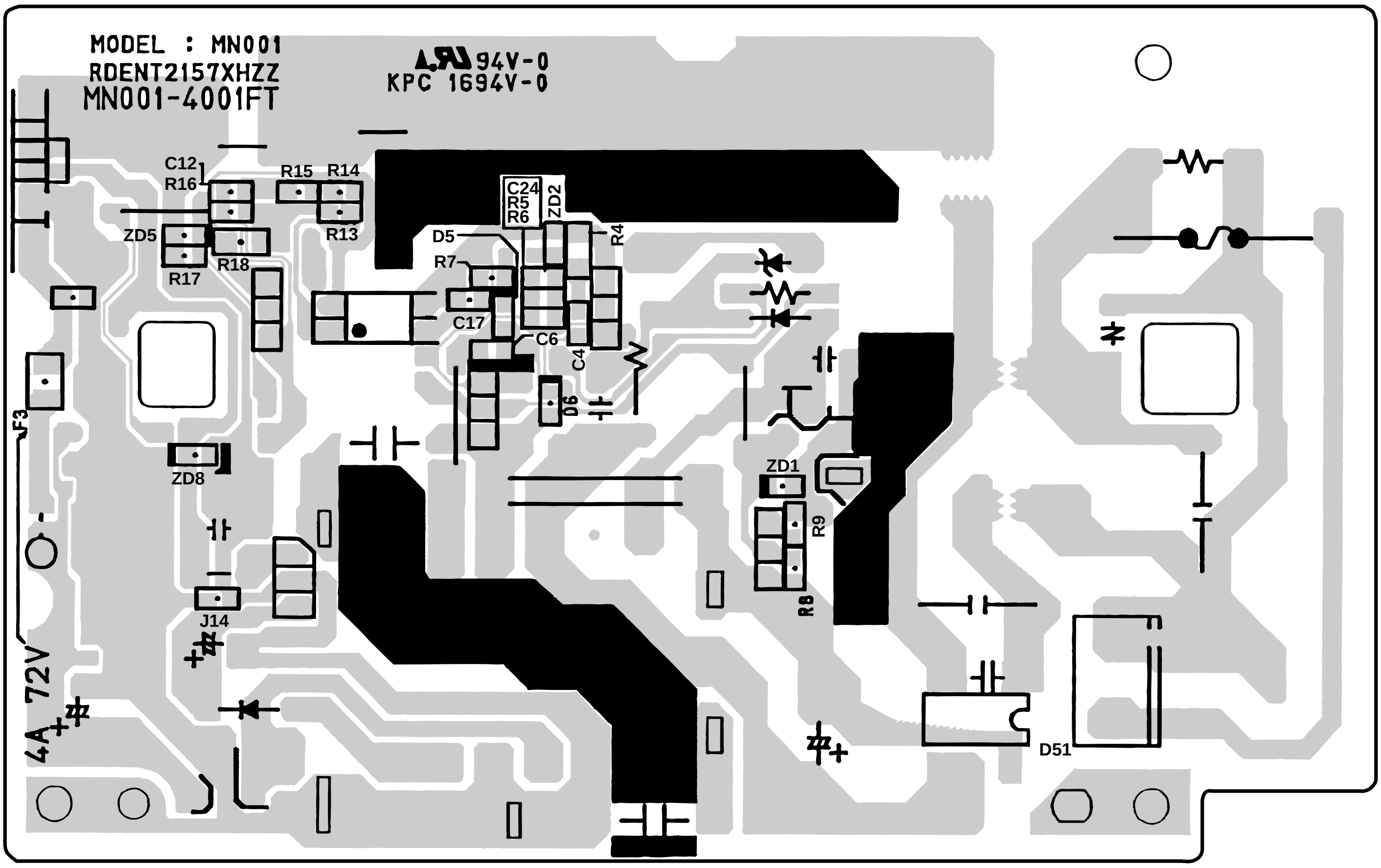
[3] Power supply PWB circuit



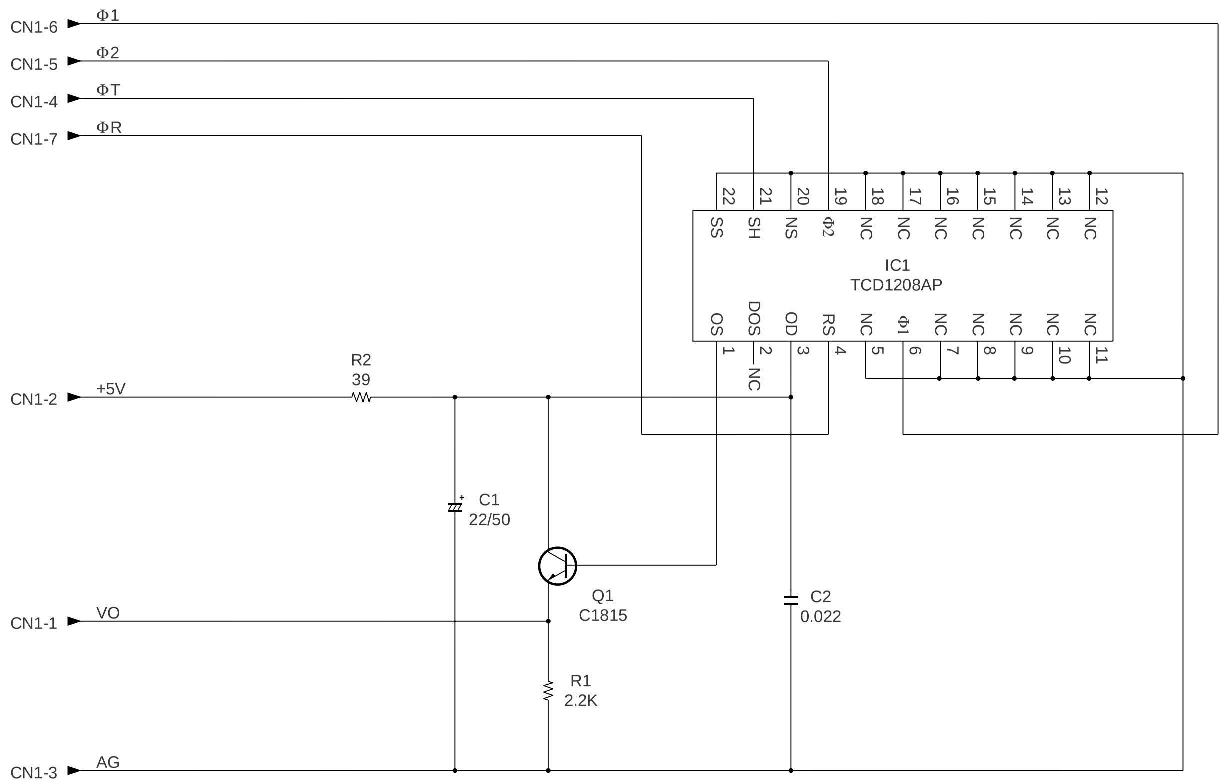
Power supply PWB parts layout (Top side)



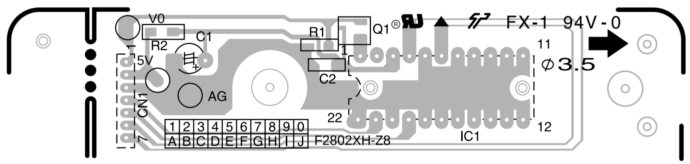
Power supply PWB parts layout (Bottom side)



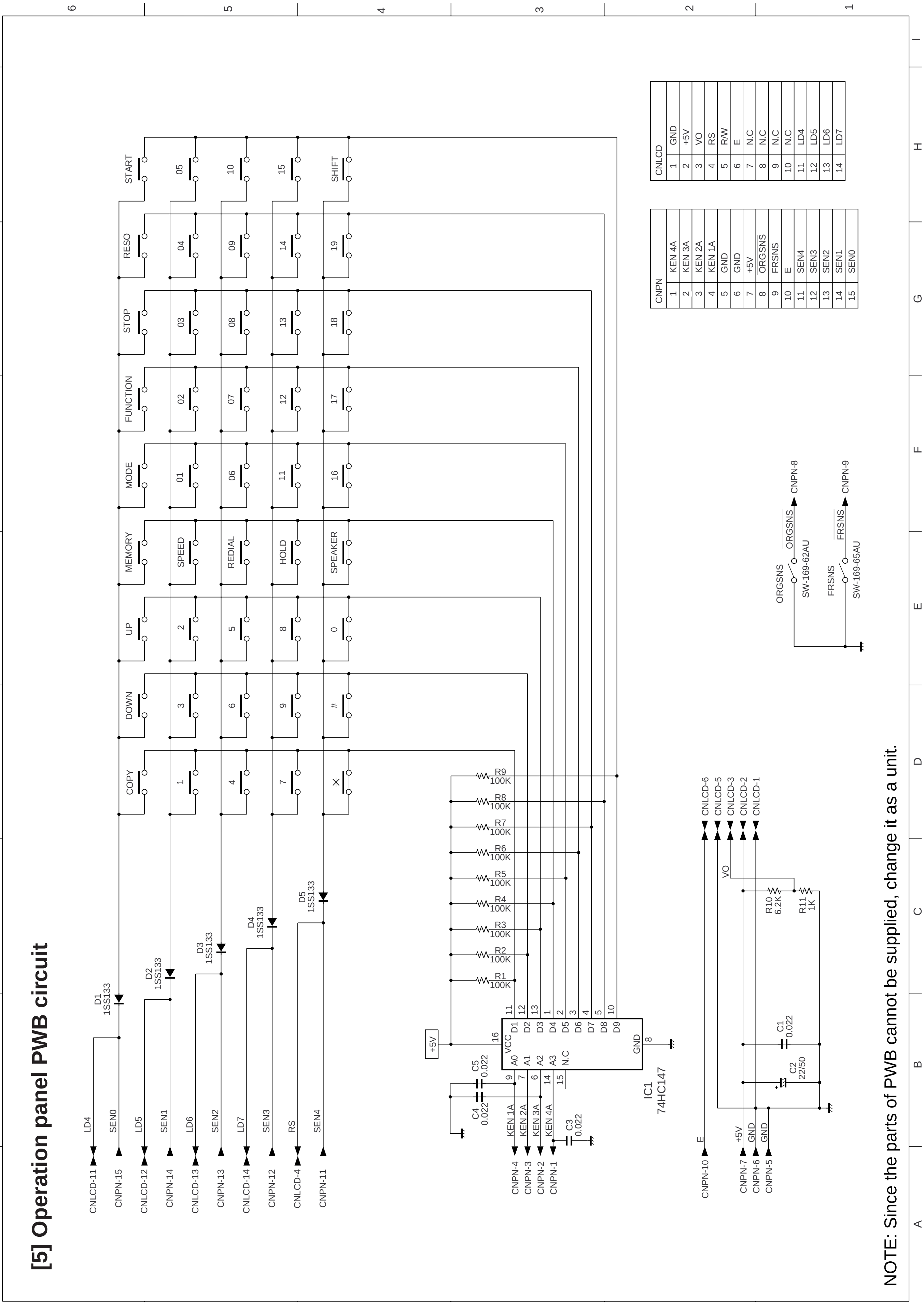
[4] CCD PWB circuit



CCD PWB parts layout



[5] Operation panel PWB circuit



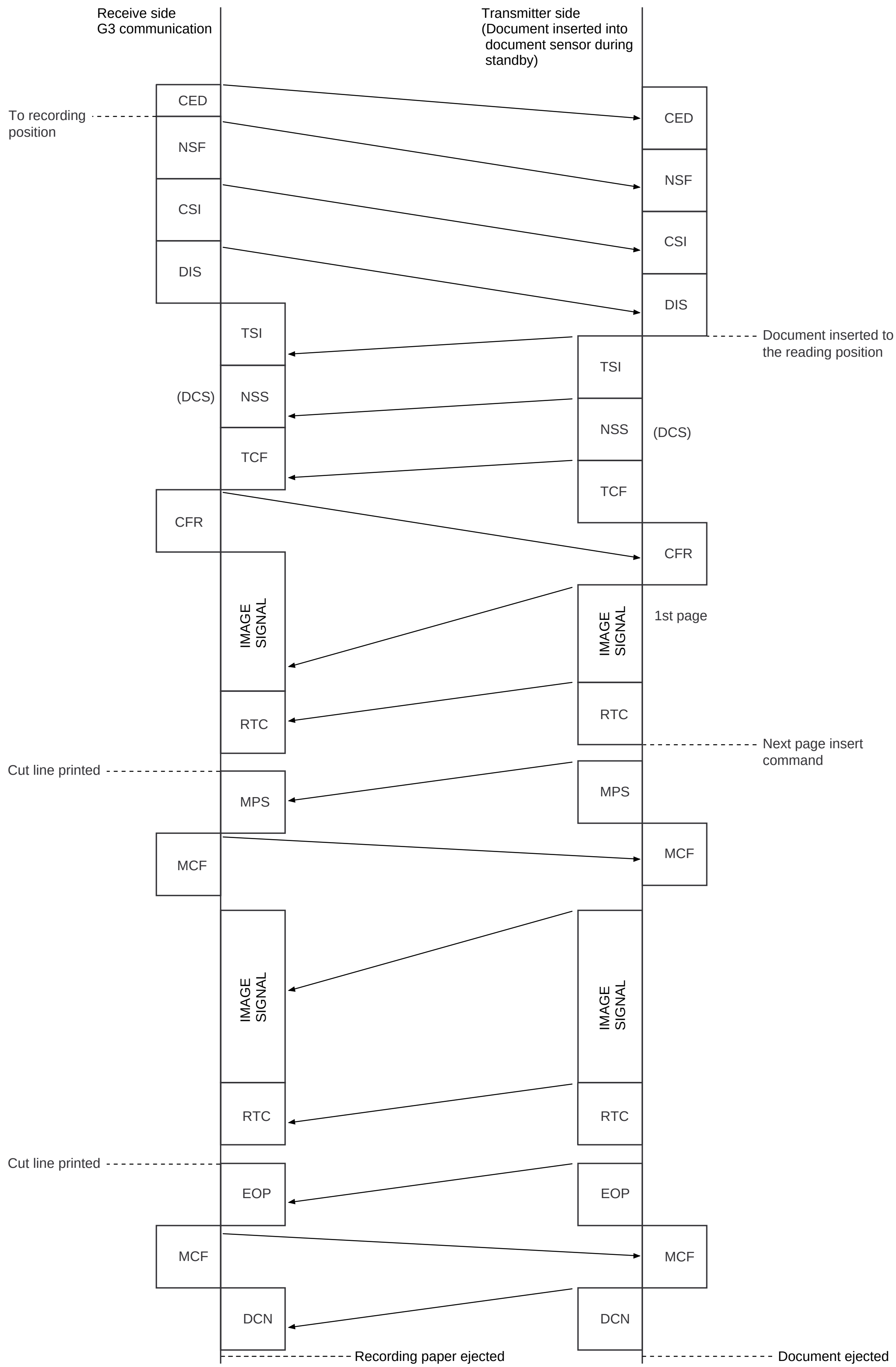
CNLCD	
1	GND
2	+5V
3	VO
4	RS
5	R/W
6	E
7	N.C
8	N.C
9	N.C
10	N.C
11	LD4
12	LD5
13	LD6
14	LD7

CNPN	
1	KEN 4A
2	KEN 3A
3	KEN 2A
4	KEN 1A
5	GND
6	GND
7	+5V
8	ORGSNS
9	FRSNS
10	E
11	SEN4
12	SEN3
13	SEN2
14	SEN1
15	SEN0

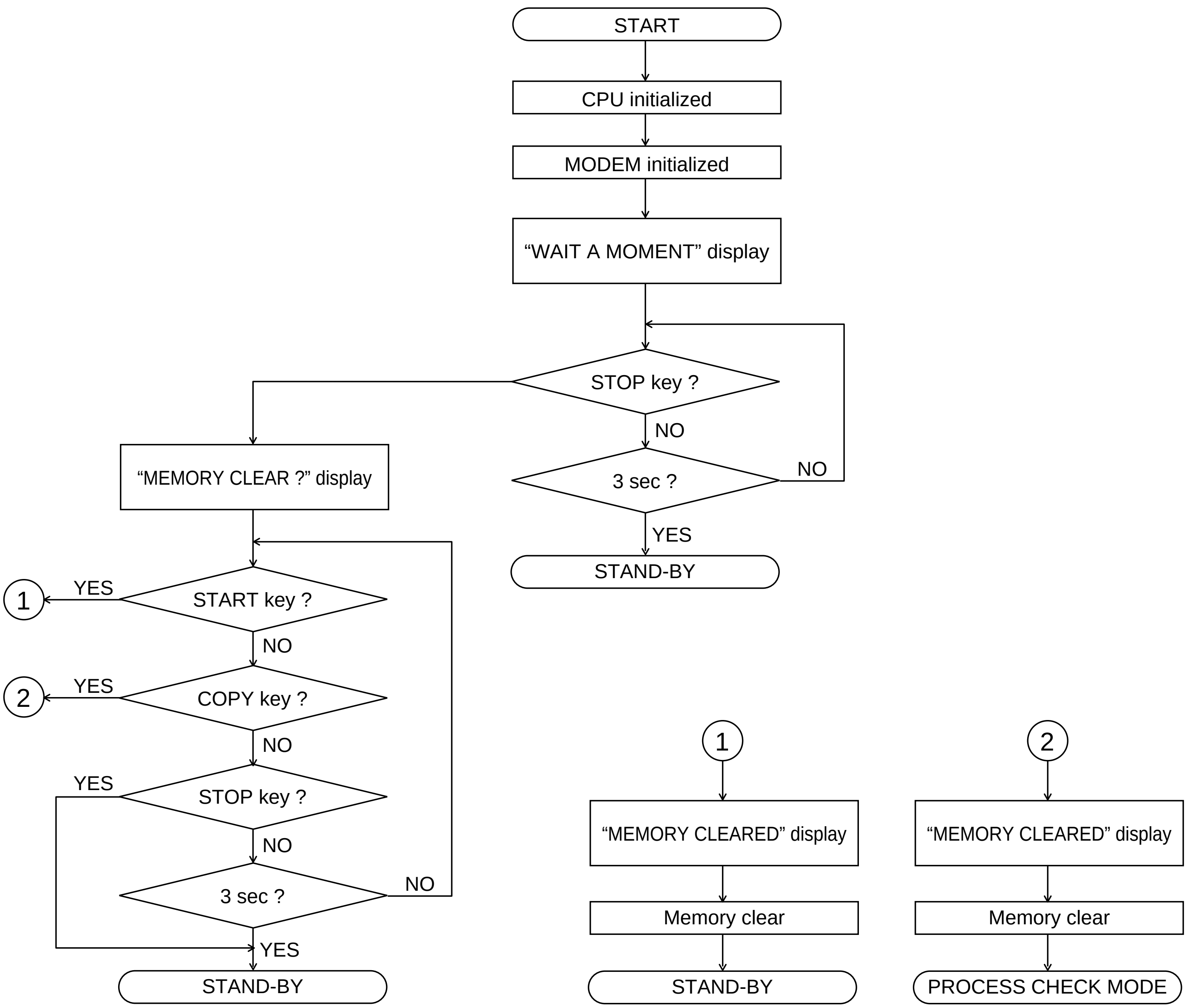
NOTE: Since the parts of PWB cannot be supplied, change it as a unit.

CHAPTER 7. OPERATION FLOWCHART

[1] Protocol



[2] Power on sequence



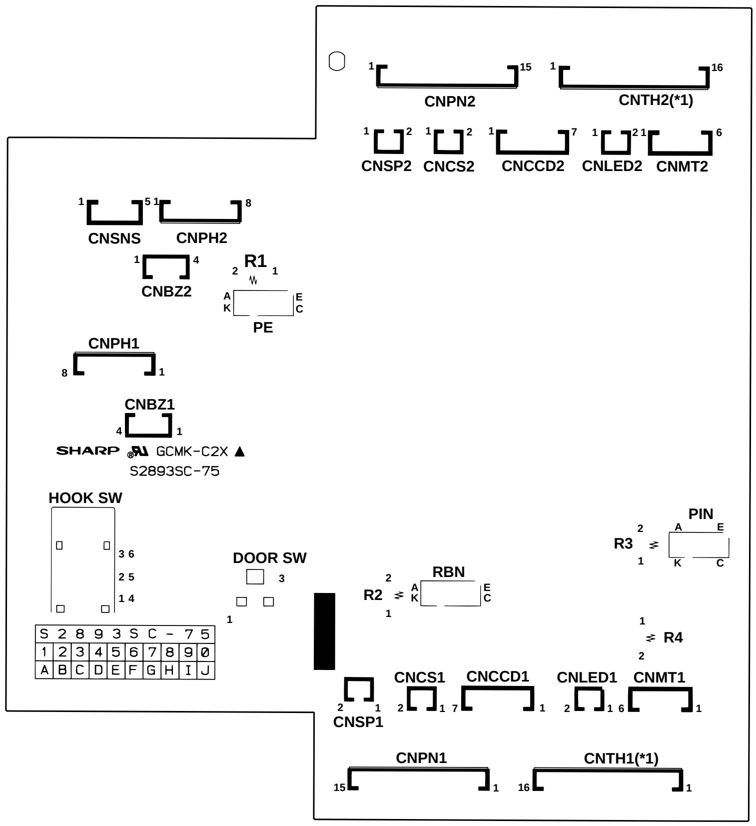
CHAPTER 8. OTHERS

[1] Service tools

1. List

NO.	PARTS CODE	DESCRIPTION	Q'TY	PRICE RANK
1	C P W B S 2 8 9 3 S C 0 2	Extension board unit	1	BZ
2	U K O G M 2 0 5 7 S C Z Z	Optical adjustment jig	1	BR

Extension board unit



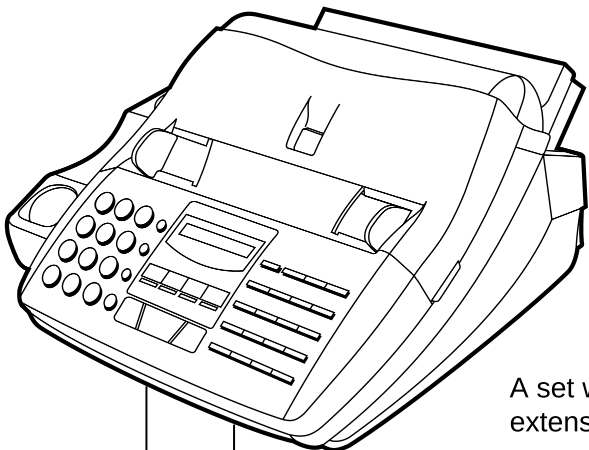
NOTE(*1): Mount connectors to CNTH1 and CNTH2 in the reverse direction against silk print of PWB.

NO.	PARTS CODE	DESCRIPTION	Q'TY	PRICE RANK
1	Q C N W – 4 7 2 3 S C Z Z	CABLE [CNPN2]	1	AL
2	C C N W – 4 7 5 9 S C 0 1	CABLE [CNTH2]	1	AX
3	Q C N W – 4 7 2 5 S C Z Z	CABLE [CNCCD2]	1	AH
4	Q C N W – 4 7 2 6 S C Z Z	CABLE [CNMT2]	1	AH
5	Q C N W – 4 7 2 7 S C Z Z	CABLE [CNLED2]	1	AF
6	Q C N W – 4 7 2 8 S C Z Z	CABLE [CNSP2]	1	AF
7	Q C N W – 4 7 2 9 S C Z Z	CABLE [CNCS2]	1	AF
8	Q C N W – 4 7 3 0 S C Z Z	CABLE [CNSNS]	1	AH
9	Q C N W – 4 7 3 1 S C Z Z	CABLE [CNPH2]	1	AN
10	Q C N W – 4 7 3 2 S C Z Z	CABLE [CNBZ2]	1	AH
11	Q C N C M 2 4 0 1 S C 0 B	CONNECTOR [CNSP1, CNSP2]	2	AA
12	Q C N C M 2 4 4 2 S C 0 B	CONNECTOR [CNCS1, CNCS2]	2	AB
13	Q C N C M 7 0 1 4 S C 0 B	CONNECTOR [CNLED1, CNLED2]	2	AD
14	Q C N C M 7 0 1 4 S C 0 E	CONNECTOR [CNSES]	1	AB
15	Q C N C M 7 0 1 4 S C 0 F	CONNECTOR [CNMT1, CNMT2]	2	AB
16	Q C N C M 7 0 1 4 S C 0 G	CONNECTOR [CNCCD1, CNCCD2]	2	AB
17	Q C N C M 7 0 1 4 S C 1 E	CONNECTOR [CNPN1, CNPN2]	2	AC
18	Q C N C M 7 0 1 4 S C 1 F	CONNECTOR [CNTH1, CNTH2]	2	AD
19	Q C N C M 7 0 1 4 S C 0 D	CONNECTOR [CNBZ1, 2]	2	AB
20	Q C N C M 7 0 1 4 S C 0 H	CONNECTOR [CNPH1, 2]	2	AB
21	V H P S G 2 0 6 S / / - 1	PHOTO TRANSISTOR [P.E, RBN, PIN]	3	AG
22	V R D - R C 2 E Y 0 0 0 J	RESISTOR (1/4W 0Ω ±5%)[R4]	1	AA
23	V R D – R C 2 E Y 2 2 1 J	RESISTOR (1/4W 220Ω ±5%) [R1, R2, R3]	3	AA
24	Q S W - Z 2 2 0 6 S C Z Z	HOOK SWITCH	1	AH
25	Q S W - Z 2 2 2 6 S C Z Z	DOOR SWITCH	1	AG

2. Description

2-1. Extension board unit

1. Remove the TEL/LIU PWB, control PWB and Power Supply PWB from this unit, and mount the extension board unit instead.
   - Before connecting the wiring to the extension board unit, set the test PWB switches to the fixed position.
2. The setting is as follows.

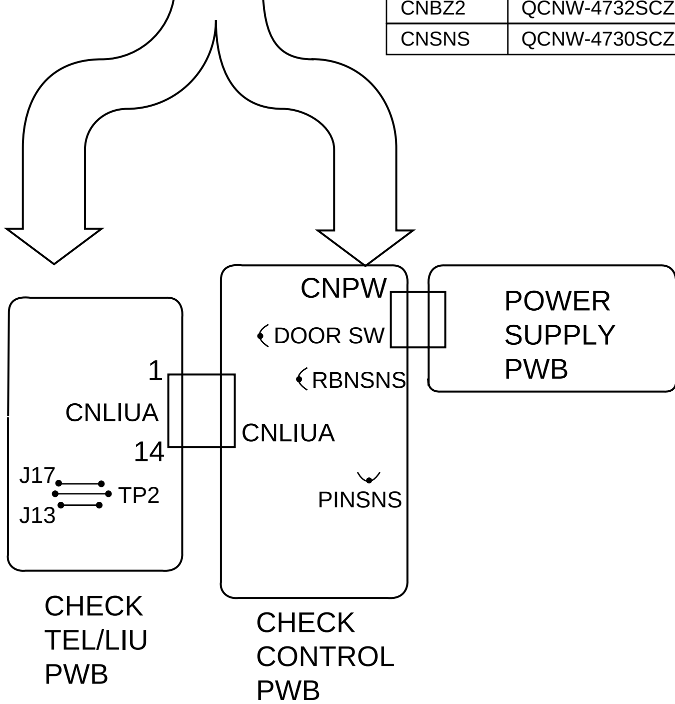


A set with a mounted extension board unit

Connector	Cable
CNPN2	QCNW-4723SCZZ
CNTH2	CCNW-4759SC01
CNCCD2	QCNW-4725SCZZ
CNMT2	QCNW-4726SCZZ
CNLED2	QCNW-4727SCZZ
CNSP2	QCNW-4728SCZZ
CNCS2	QCNW-4729SCZZ
CNPH2	QCNW-4731SCZZ
CNBZ2	QCNW-4732SCZZ
CNSNS	QCNW-4730SCZZ

Cable color	CNSNS	Connected to (PWB)
1. Brown	RHS	TP2 (TEL/LIU)
2. Red	DRSNS	DOOR SW (Control)
3. Orange	N.C.	—————
4. Yellow	RBN	RBNSNS (Control)
5. Green	PIN	PINSNS (Control)

Cable

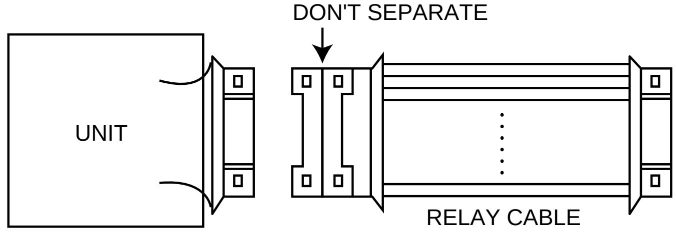


The hook switch are operated by OR of the mechanical unit switch and the test PWB switch. When performing installation in the machine unit, set the test PWB switches to the fixed position.

	Mechanical unit	PWB to be tested
	Actual operation with mechanical unit	
Hook SW	ON/OFF operation	ON-HOOK
	PWB sensor check	
Hook SW	ON-HOOK	ON/OFF operation

* Recording paper: ON
  No recording paper: OFF

DON'T SEPARATE



Note: For the thermal head cable only, connect to the relay cable, not to the relay PWB.

2-2. Scan optical system adjustment

(1) Outline

The adjustment procedures of the scan optical system are described below:

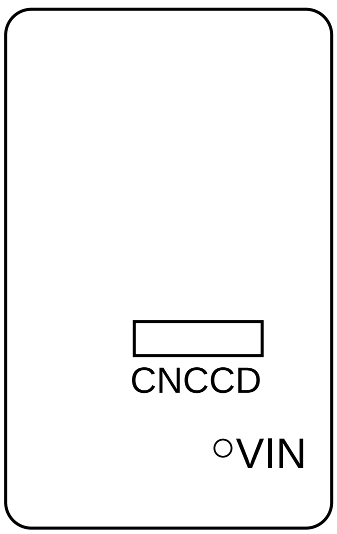
(2) Adjustment procedures

① Switch off the machine and disconnect the AC power cable from the wall socket.

② Fully open the upper cabinet, remove the fixing screws of the recording paper tray and remove the recording paper tray. In order to perform a focus adjustment, remove the optical system unit from the frame.

③ Disconnect the main PWB from the TEL/LIU PWB.

④ Connect your oscilloscope channel 1 to the VIN signal and channel 2 of your oscilloscope to ϕT signal (Refer Pin 4 of connector CNCCD on the main pwb). Connect the earth clips of either probe to AG ground as shown. Set the trigger to channel 2.



VO CNCCD-3 (CCD source output)
øT CNCCD-6 (Line sync signal)
VG CNCCD-5 (Ground)

⑤ Re-connect the main PWB to the TEL/LIU PWB and connect these circuit boards to the connectors on the chassis.

⑥ Re-assemble up to and including the recording paper tray to the main chassis and close upper cabinet.

⑦ Plug the AC power cable into the wall outlet and turn the fax machine on.

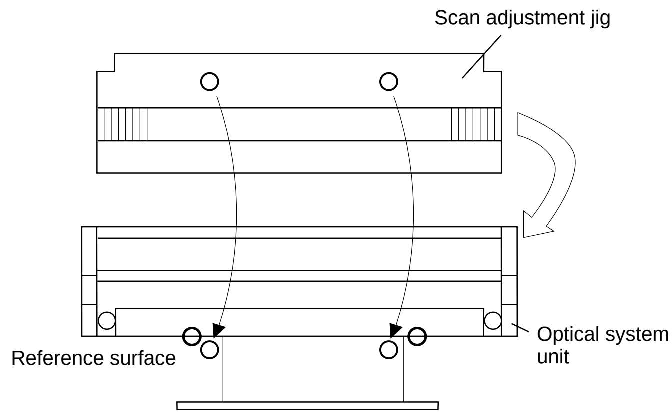
⑧ Insert a test chart in the document hopper and execute the CCD Adjust Mode diagnostic. Press the START key to enable local copy until approximately one fifth of the page has been copied, then press the STOP key to enable the CPU wait state.

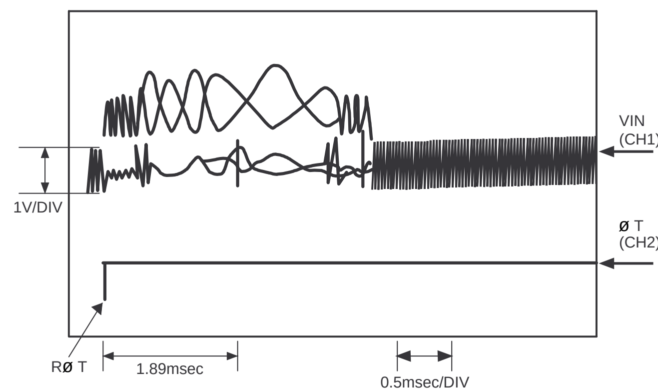
⑨ Fully open the upper cabinet and remove the recording paper tray.

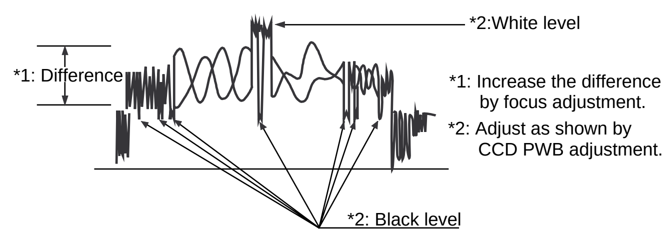
⑩ Install the scan adjustment jig to the optical system unit, so that the pattern surface is on the lower side.

⑪ Fit the pins of the scan adjustment jig to the holes of the optical system frame.

⑫ Lightly loosen the red screws of the CCD PWB and obtain the VID signal waveform in synchronization with ϕT signal waveform. Adjust the CCD PWB positioning to obtain the waveform as shown below.







[CCD waveform model]

CCD waveform

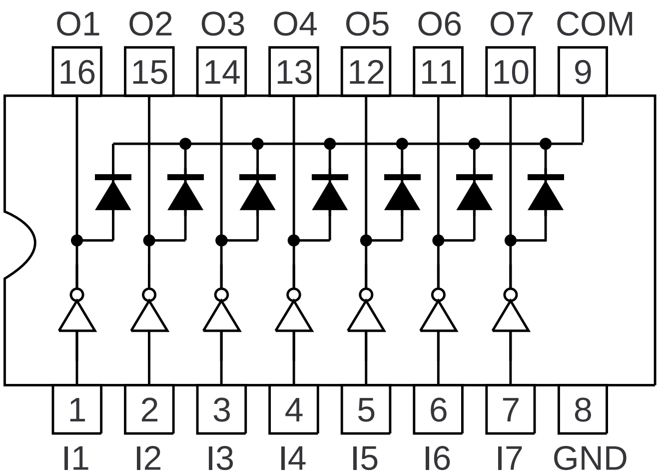
⑬ After completing the CCD adjustment, tighten the two red screws on the CCD pwb and apply screw locking material to prevent the CCD pwb from moving.

⑭ Assemble the recording paper tray and fixing screws.

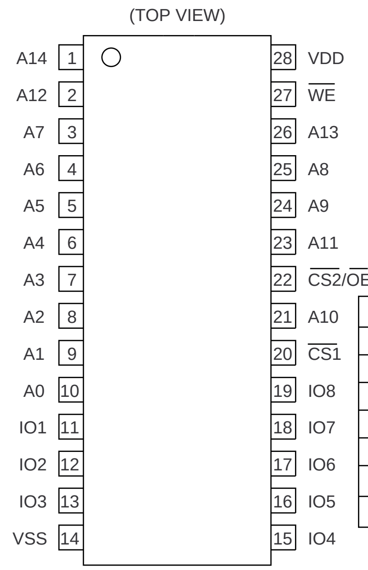
[2] IC signal name

CONTROL PWB UNIT

IC1: VHiTD62001AP1 (TD62001AP)

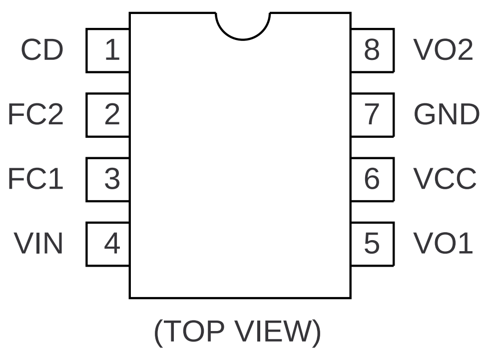


IC8: VHiW24258S7LE (W24258S-70LE)

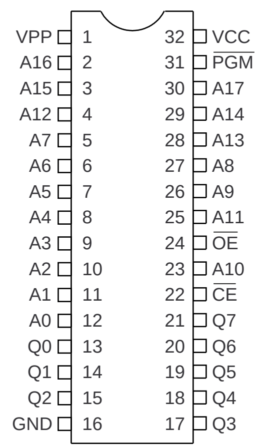


Pin name	Signal
A0~A14	Address input
CS1/CS2	Chip enable
WE	Write enable
OE	Write enable
I/O1~I/O8	Data I/O
VDD	Power source
VSS	Ground

IC15: VHiNJM2113M-1 (NJM2113M)

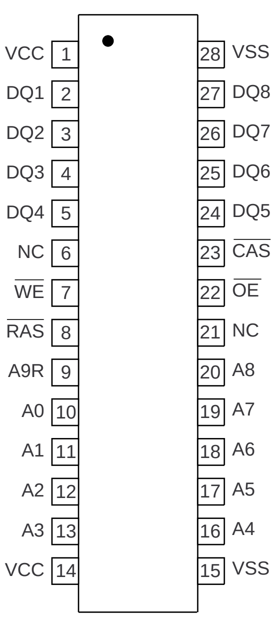


IC4: VHi27L20012MX (27L2000)



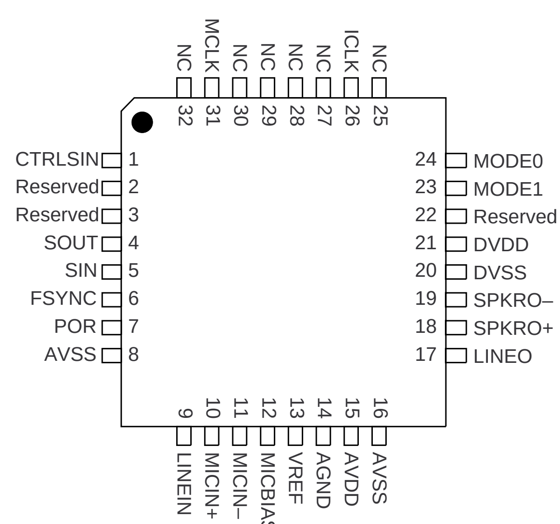
PIN NAME	SIGNAL
A0~A17	ADDRESS INPUT
Q0~Q7	DATA INPUT/OUTPUT
CE	CHIP ENABLE INPUT
OE	OUTPUT ENABLE INPUT
PGM	PROGRAMMABLE ENABLE INPUT
VPP	PROGRAM SUPPLY VOLTAGE
NC	NO INTERNAL CONNECTION
VCC	POWER SUPPLY PIN (+5V)
GND	GROUND PIN

IC5: RH-iX2168SCZZ (MSM51V4800E)

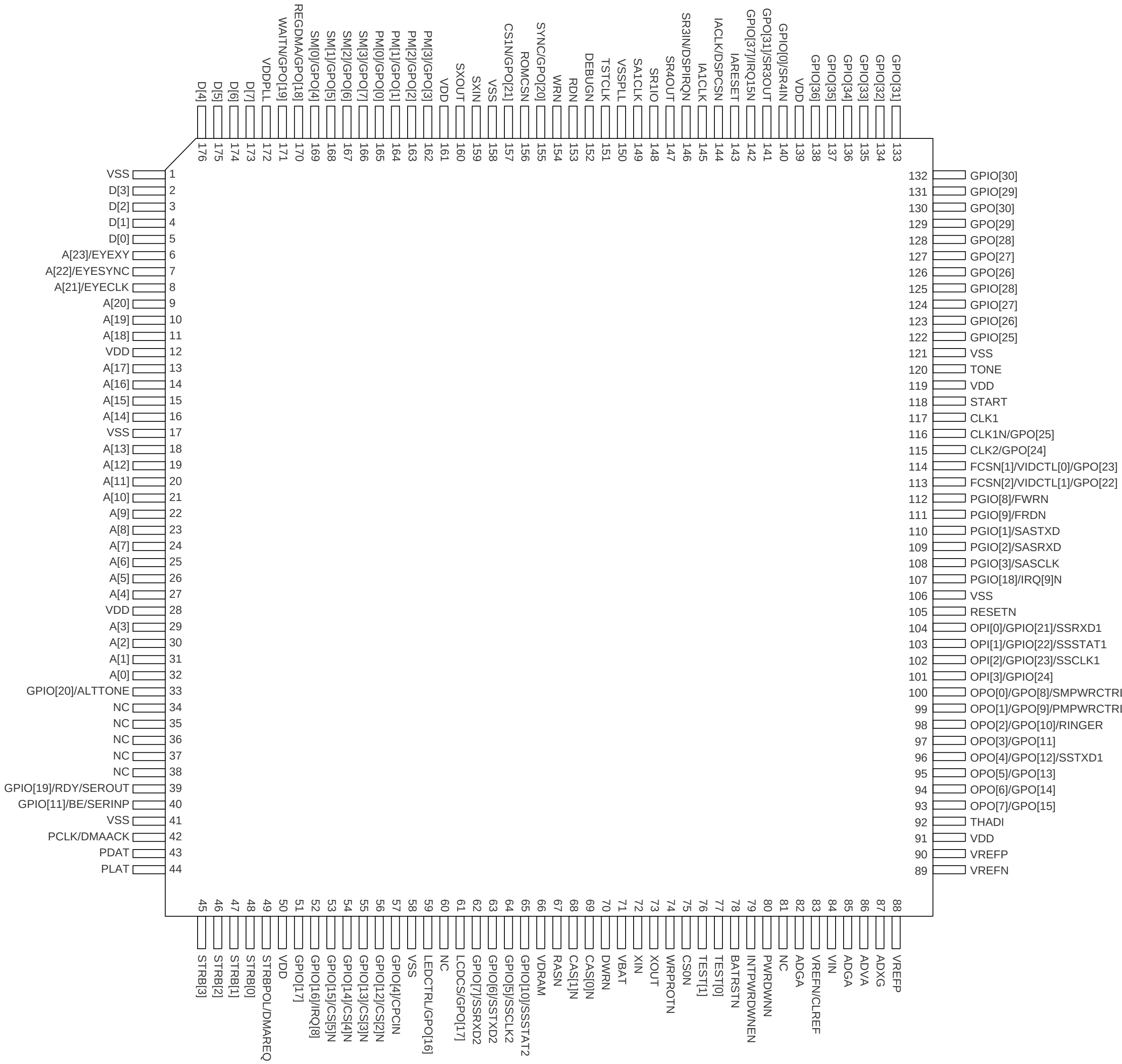


PIN NAME	SIGNAL
A0~A8, A9R	ADDRESS INPUT
RAS	ROW ADDRESS STROBE
CAS	COLUMN ADDRESS STROBE
DQ1~DQ8	DATA INPUT/OUTPUT
OE	OUTPUT ENABLE
WE	WRITE ENABLE
VCC	POWER SUPPLY (+3.3V)
VSS	GROUND
NC	NO INTERNAL CONNECTION

IC13: VHiSCE114//-1 (20415)



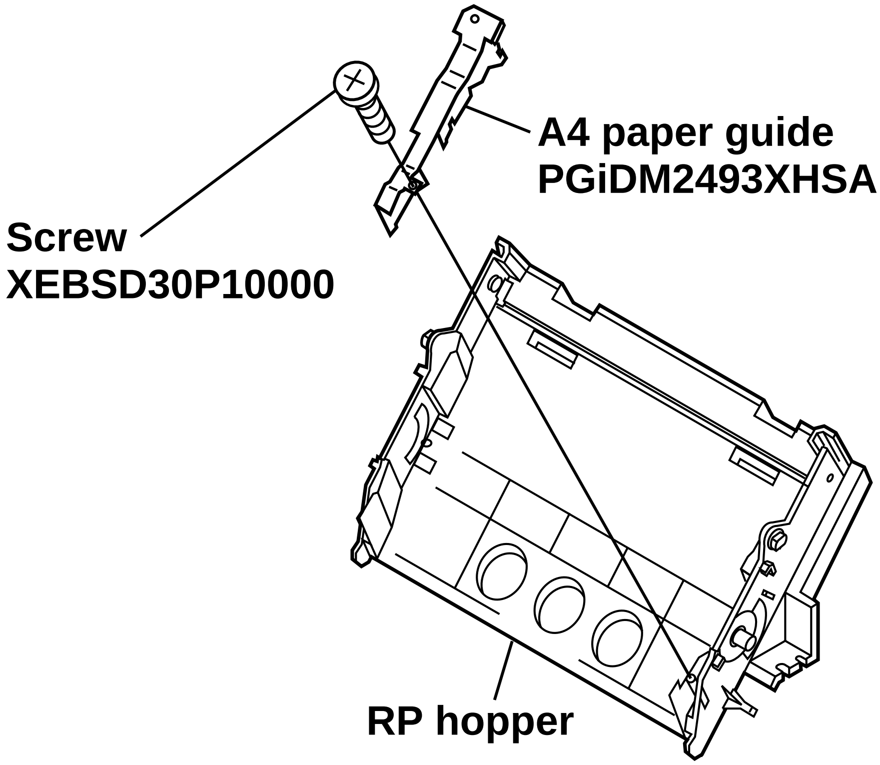
IC9: VHiSCE114//-1 (SCE114)



[3] Changing the record paper size

How to change the A4 size and letter size of the record papers

1) It becomes the record paper of the A4 size by installing A4 paper guide (PGiDM2493XHSA) which shows in the drawing. Remove A4 guide when you use the record paper of the letter size.



2) Set soft switch SW-L2 No.1 and the initialization of SW-L2 No.2 as follows.

SW NO.	DATA NO.	ITEM	Switch setting and function				Initial setting	Remarks
			1		0			
SW-L2		Paper set size		LETTER	LEGAL	A4		OPTION
	1		No. 1	0	0	1	0	
	2		No. 2	0	1	0	0	

SHARP PARTS GUIDE

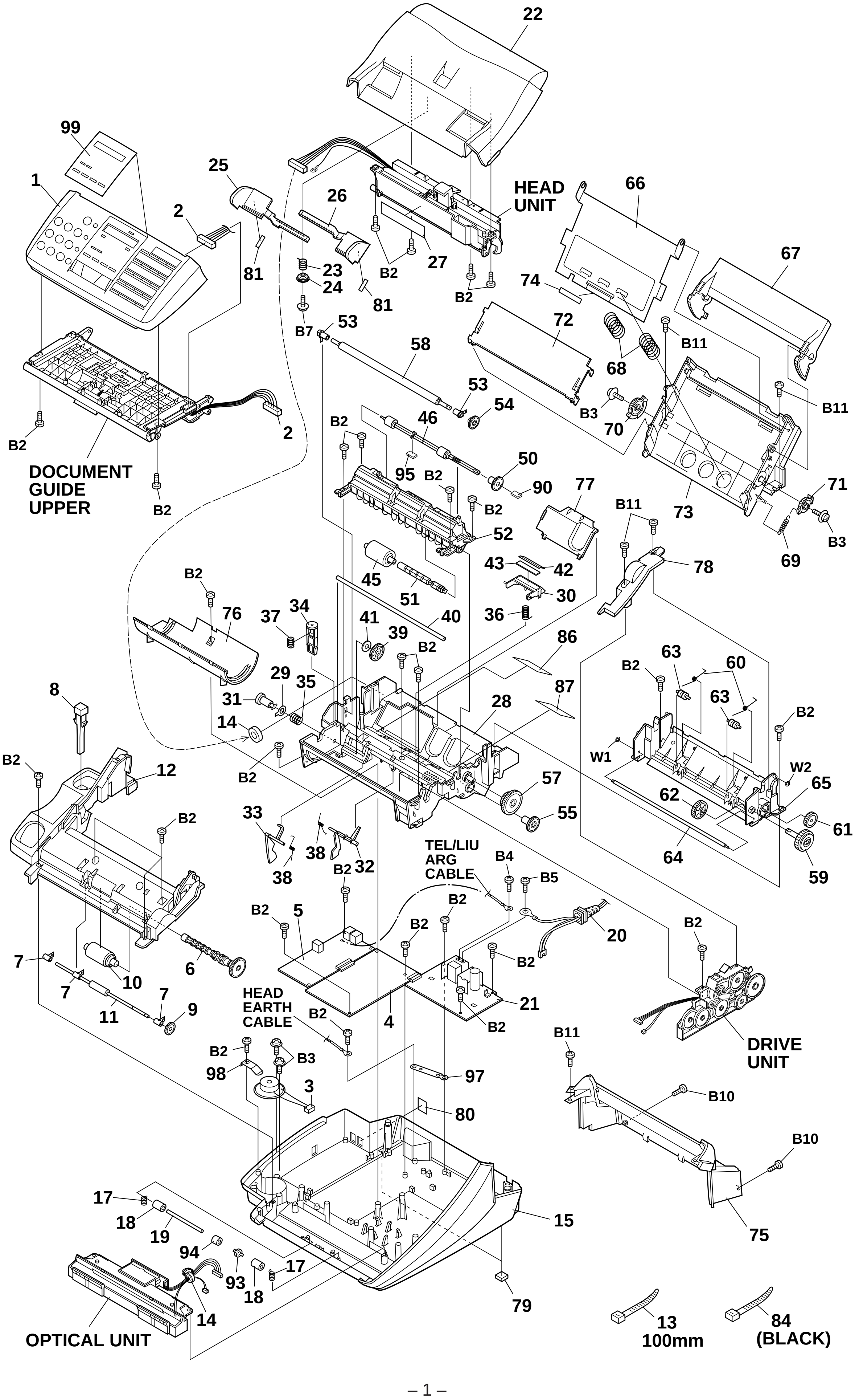
UX-510A
MODEL FO-1470

SELECTION CODE	DESTINATION
U	U.S.A.

CONTENTS

Because parts marked with "⚠" are indispensable for the machine safety maintenance and operation, it must be replaced with the parts specific to the product specification.

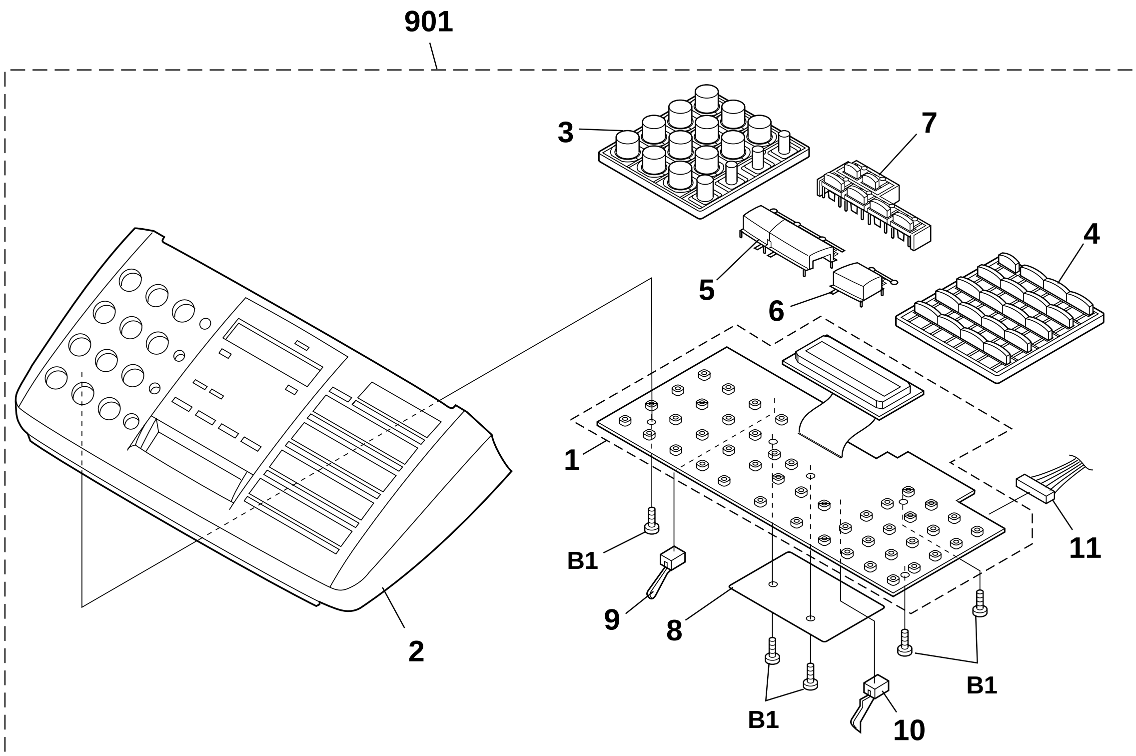
[1] Cabinet, etc.



NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[1] Cabinet,etc.					
1	DCEKP264CXH01	BH	N	E	Operation panel unit [510UA]
	DCEKP264CXH02	AT	N	E	Operation panel unit [1470U]
2	QCNW-390AXHZZ	AK	N	C	Panel cable
3	CCNW-391AXH01	AK	N	C	Speaker ass'y
4	DCEKC281PXHZZ	BU	N	E	Control PWB unit(Within ROM)
5	DCEKL266CXH01	BC	N	E	TEL/LIU PWB unit
6	CGERH2363AX01	AK		C	Feed gear ass'y
7	LBSHP2088AXZZ	AC		C	Transfer bearing
8	MLEVP2253XHYA	AD	N	C	Hook switch lever
9	NGERH2275XHZZ	AC		C	Transfer gear 2
10	NROLR2333XHZZ	AP		C	Paper feed roller
11	NROLR2467XHZZ	AM	N	C	Transfer roller
12	PGIDM2481XHYA	AP	N	C	Document guide lower [510UA]
	PGIDM2481XHYB	AG	N	C	Document guide lower [1470U]
13	LBNDJ2006XHZZ	AA		C	Band(100mm)
⚠ 14	RCORF2125XHZZ	AE		B	Core(TRA31)
15	GCABB2290XHAA	AZ	N	D	Lower cabinet [510UA]
	GCABB2290XHAB	AL	N	D	Lower cabinet [1470U]
17	MSPRC3039XHFJ	AC		C	Pinch roller spring 2
18	NROLP2334XHZA	AC		C	Pinch roller
19	NSFTZ2281XHZZ	AD		C	Pinch roller shaft
⚠ 20	QACCD2054XHZZ	AP	N	B	AC cord
⚠ 21	RDENT2157XHZZ	BF	N	E	Power supply PWB unit
22	GCOVA2376XHYA	AP	N	C	Top cover [510UA]
	GCOVA2376XHYB	AG	N	C	Top cover [1470U]
23	MSPRC3249XHZZ	AB	N	C	Hopper spring
24	NGERP2318XHZZ	AD		C	Pinion gear
25	PGIDM2483XHYA	AE	N	C	Hopper guide,left [510UA]
	PGIDM2483XHYB	AC	N	C	Hopper guide,left [1470U]
26	PGIDM2484XHYA	AE	N	C	Hopper guide,right [510UA]
	PGIDM2484XHYB	AC	N	C	Hopper guide,right [1470U]
27	TLABH4161AXZZ	AD		D	Imaging film set label
28	LFRM-2180XHAZ	AX	N	C	Main frame
29	LPLTM2791AXFW	AD		C	Hold down plate B
30	LPLTP2884AXZZ	AP		C	Separate plate
31	LSTPP2044XHZZ	AF		C	Back tention stopper
32	MLEVP2249XHYZ	AD	N	C	P-IN sensor lever
33	MLEVP2252XHYZ	AD	N	C	Film sensor lever
34	MLEVP2258XHYZ	AD	N	C	Cover switch lever
35	MSPRC2999XHFJ	AC		C	Back tention spring
36	MSPRC3247XHZZ	AB	N	C	Separate plate spring
37	MSPRC2927AXFJ	AC		C	Pop up spring
38	MSPRD2929AXFJ	AC		C	Sensor lever spring
39	NGERH2310XHZZ	AE		C	Back tension gear
40	NSFTM2280AXZZ	AK		C	Film guide shaft B
41	PFLT-2009AXZZ	AD		C	Back tension felt
42	PSHEZ3344AXZZ	AD		C	Separate sheet
43	PSHEZ3293AXZZ	AH		C	Separate plate sheet
45	CROLR2362AX01	AN		C	PU roller ass'y
46	CROLR2363XH02	AK	N	C	PO roller ass'y
50	NGERH2359AXZZ	AD		C	PO gear
51	NSFTM2268XHYZ	AE	N	C	PU roller shaft
52	PGIDM2479XHYA	AK	N	C	U turn guide
53	LBSHP2086AXZZ	AC		C	Platen bearing
54	NGERH2309XHZZ	AC		C	Platen gear
55	NGERH2358AXZZ	AC		C	PU gear
57	NGERH2361AXZZ	AE		C	Reduction gear A
58	NROLR2468XHZZ	AS	N	C	Platen roller
59	CGERH2314AX51	AP		C	Slip gear ass'y
60	MSPRD3250XHZZ	AB	N	C	PO pinch roller spring
61	NGERH2279XHZZ	AC		C	Idler gear A
62	NGERH2367AXZZ	AD		C	Take-up gear
63	NROLP2332XHZZ	AD		C	PO pinch roller
64	NSFTM2279AXZZ	AK		C	Film shaft C
65	PGIDM2485XHYA	AC	N	C	PO guide
66	LPLTM2924XHFW	AQ		C	Paper up plate
67	LPLTP2888XHYA	AG	N	C	RP release plate [510UA]
	LPLTP2888XHYB	AC	N	C	RP release plate [1470U]
68	MSPRC2926AXFJ	AD		C	Cassette spring
69	MSPRT2932AXFJ	AC		C	RP release spring
70	NGERH2365AXZZ	AD		C	RP release gear,left
71	NGERH2366AXZZ	AD		C	RP release gear,right
72	PGIDM2480XHYA	AF	N	C	Paper guide
73	PHOP-2095XHYA	AM	N	C	RP hopper [510UA]
	PHOP-2095XHYB	AE	N	C	RP hopper [1470U]
74	PSEL-2015SCZZ	AB		C	RP pad
75	GCABC2291XHYA	AH	N	D	Rear cabinet [510UA]
	GCABC2291XHYB	AL	N	D	Rear cabinet [1470U]
76	GCOVA2375XHYZ	AK	N	C	ROM cover
77	GCOVA2378AXZZ	AE		C	Memory cover

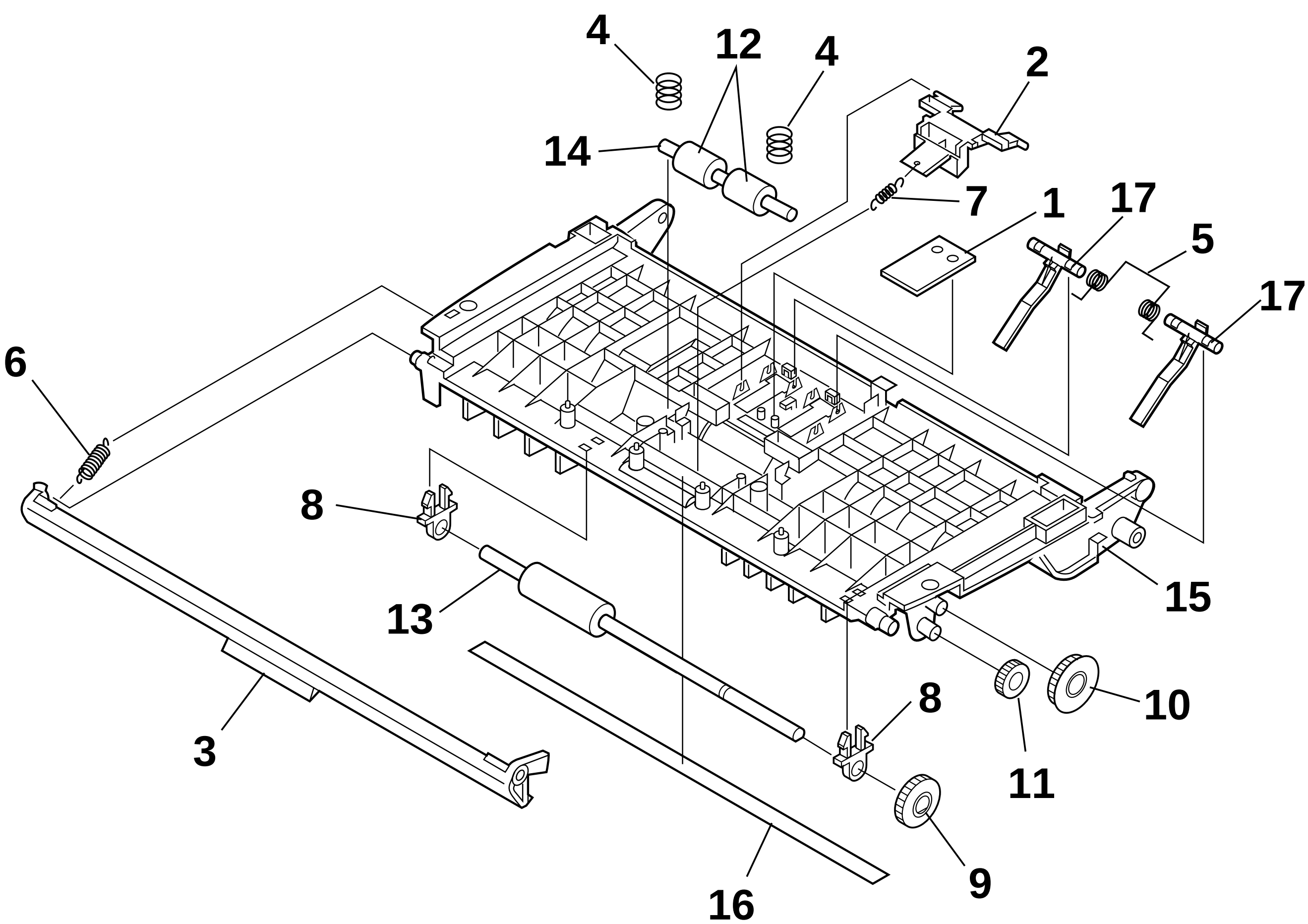
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[1] Cabinet,etc.					
78	PCOVA2114XHYZ	AE	N	C	Side cover
79	GLEGG2063AXZZ	AC		C	Rubber leg
80	PSHEZ3563XHZZ	AB	N	C	Jack sheet
81	PSHEZ3332AXZZ	AE		C	Hopper sheet
84	LBNDJ2008SCZZ	AA		C	Band(Black)
86	PSHEZ3341AXZZ	AC		C	Guide sheet, left
87	PSHEZ3342AXZZ	AC			Guide sheet, right
90	PCUSG2112XHZZ	AE		C	PO gear cushion
93	LPLTP2968XHZZ	AP		C	Document kick plate
94	NROLP2396XHZZ	AD		C	Document kick roller
95	PCUSS2114XHZZ	AD		C	PO cushion
97	LPLTM3122XHZZ	AD	N	C	Earth plate
98	MSPRP3123XHZZ	AC		C	Speaker holder spring
99	HPNLH2405XHSA	AG	N	D	Decoration panel [510UA]
	HPNLH2405XHSB	AC	N	D	Decoration panel [1470U]
B2	XEBSD30P10000	AA		C	Screw(3x10)
B3	LX-BZ2222AXZZ	AC		C	Screw
B4	XBPSD30P06K00	AA		C	Screw(3x6)
B5	XBPSN40P06K00	AA		C	Screw(4x6)
B7	LX-BZ2138XHZZ	AB		C	Screw(3x6)
B10	XEBSE30P10000	AA		C	Screw(3x10)
B11	XEBSF30P12000	AA		C	Screw(3x12)
W1	LX-WZ2228XHZZ	AB		C	Cut washer
W2	LX-WZ2246XHZZ	AB		C	Washer

[2] Upper cabinet



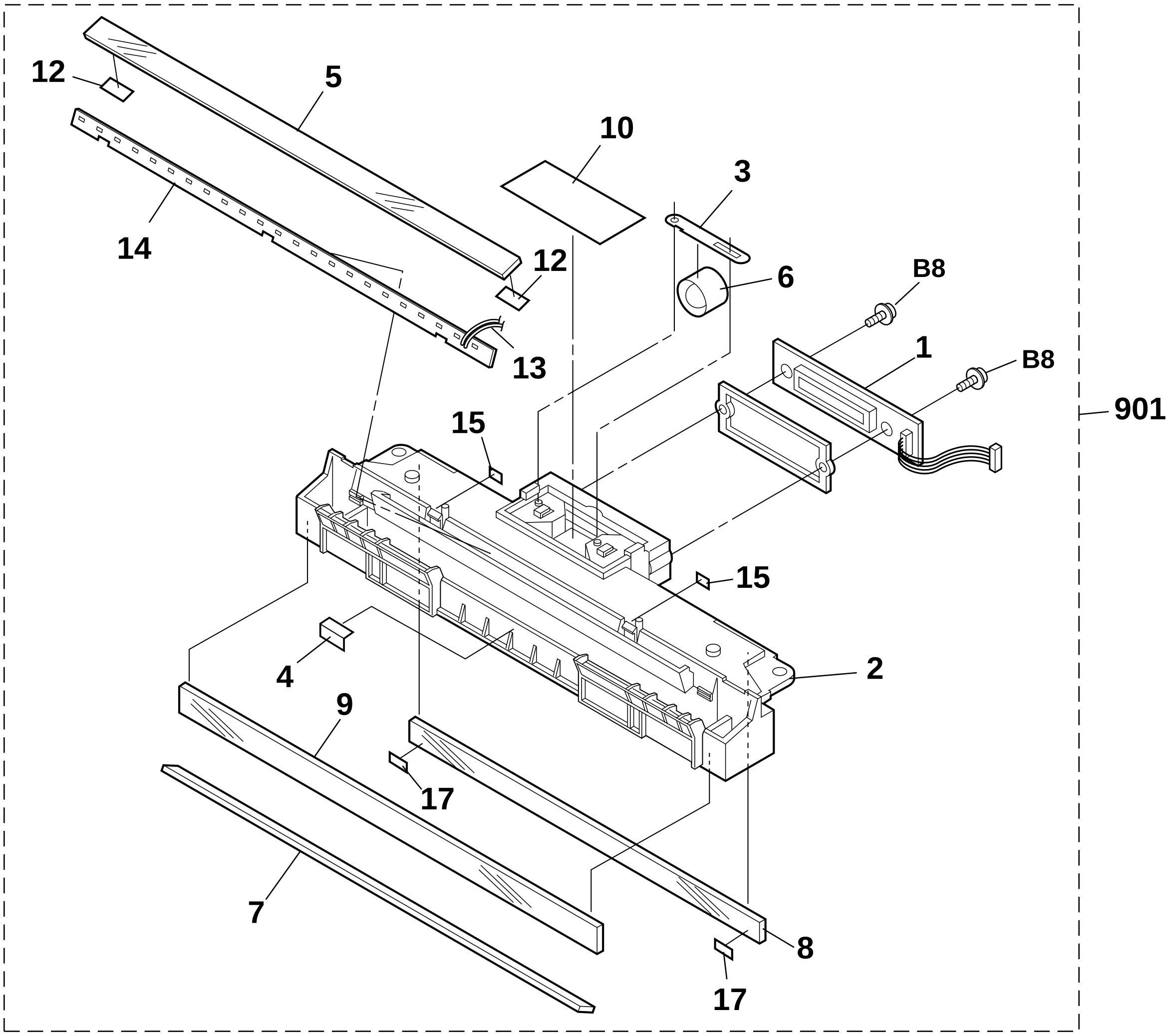
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[2] Upper cabinet						
1	DCEKP351BXH02	BF	N	E	Operation panel PWB unit(Without sensor)	
2	GCABA2289XHYA	AR	N	D	Upper cabinet	[510UA]
	GCABA2289XHYB	AE	N	D	Upper cabinet	[1470U]
3	JBTN-2202XHYA	AH	N	C	12 key	[510UA]
	JBTN-2202AXSC	AG		C	12 key	[1470U]
4	JBTN-2203XHYA	AF	N	C	Direct key	[510UA]
	JBTN-2203AXSC	AF		C	Direct key	[1470U]
5	JBTN-2204XHYA	AE	N	C	Start key	[510UA]
	JBTN-2204AXSB	AD		C	Start key	[1470U]
6	JBTN-2205XHYA	AD	N	C	Stop key	[510UA]
	JBTN-2205AXSB	AD		C	Stop key	[1470U]
7	JBTN-2206XHYA	AE	N	C	Mode key	[510UA]
	JBTN-2206XHYB	AC	N	C	Mode key	[1470U]
8	PSHEZ3291AXZZ	AD		C	Insulation sheet	
9	QSW-M2246AXZZ	AH		C	FRSNS sensor	[FRSNS]
10	QSW-M2247AXZA	AE		C	ORGSNS sensor	[ORGNSN]
11	QCNW-390AXHZZ	AK	N	C	Panel cable	
B1	XEBSD20P06000	AA		C	Screw(2x6)	
	(Unit)					
901	DCEKP264CXH01	BH	N	E	Operation panel unit	[510UA]
	DCEKP264CXH02	AT	N	E	Operation panel unit	[1470U]

[3] Document guide upper



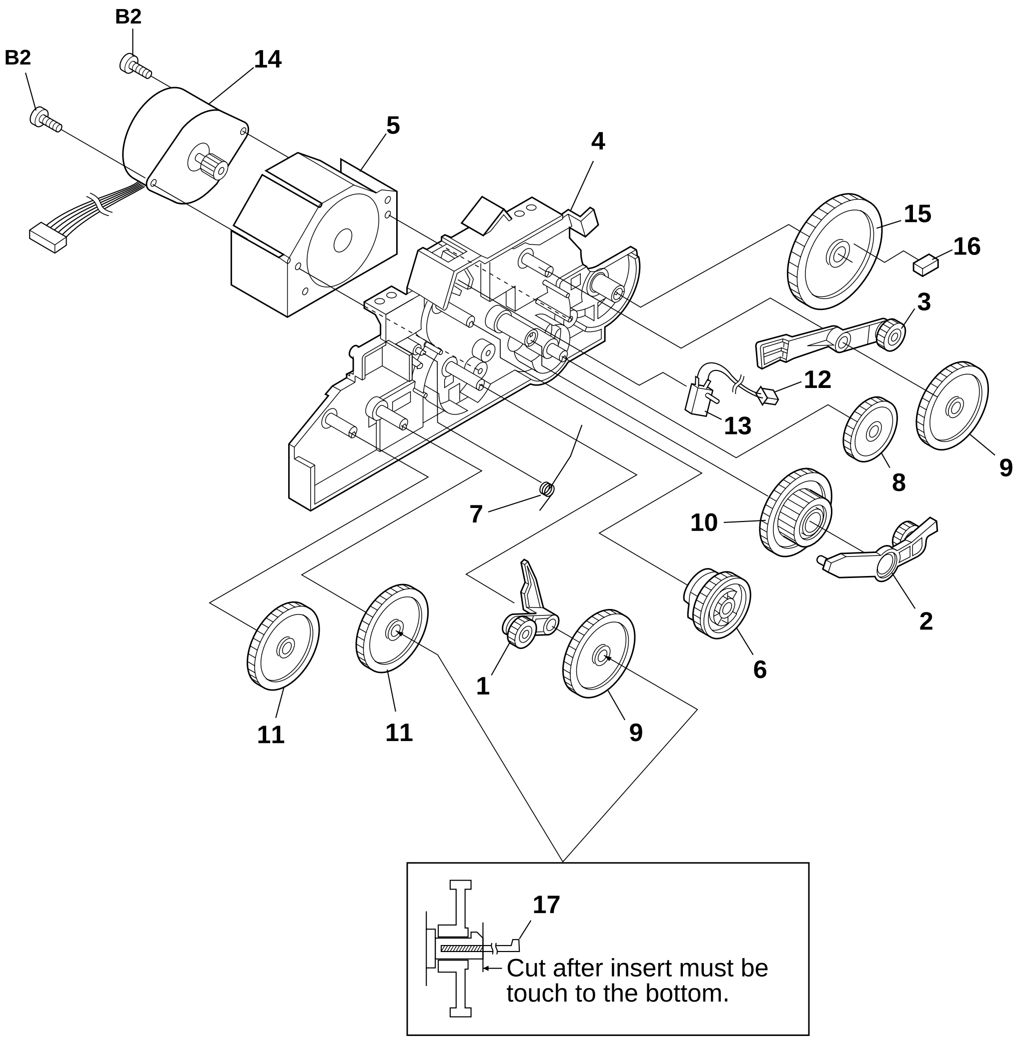
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[3] Document guide upper					
1	LPLTG2707XHZZ	AE		C	Separation rubber
2	LPLTP2790XHZZ	AD		C	Separate plate
3	MLEVP2257XHZA	AC	N	C	Panel lock lever
4	MSPRC2924AXFJ	AC		C	Pinch roller spring
5	MSPRD3197XHZZ	AD	N	C	Paper feed spring
6	MSPRT2923AXFJ	AC		C	Panel lock lever spring
7	MSPRT3235XHZZ	AB	N	C	Separate spring
8	NBRGP2141AXZZ	AC		C	Transfer bearing
9	NGERH2275XHZZ	AC		C	Transfer gear 2
10	NGERH2317XHZZ	AC		C	Idler gear,28Z
11	NGERH2356XHZZ	AC		C	Idler gear,20Z
12	NROLP2334XHZA	AC		C	Pinch roller
13	NROLR2466XHZZ	AK	N	C	Transfer roller
14	NSFTZ2257AXZZ	AE		C	Pinch roller shaft
15	PGIDM2482XHAZ	AM	N	C	Document guide upper
16	PSHEZ3290AXZZ	AD		C	Rear sheet
17	MARMP2026XHZZ	AC	N	C	Paper feed arm

[4] Optical unit



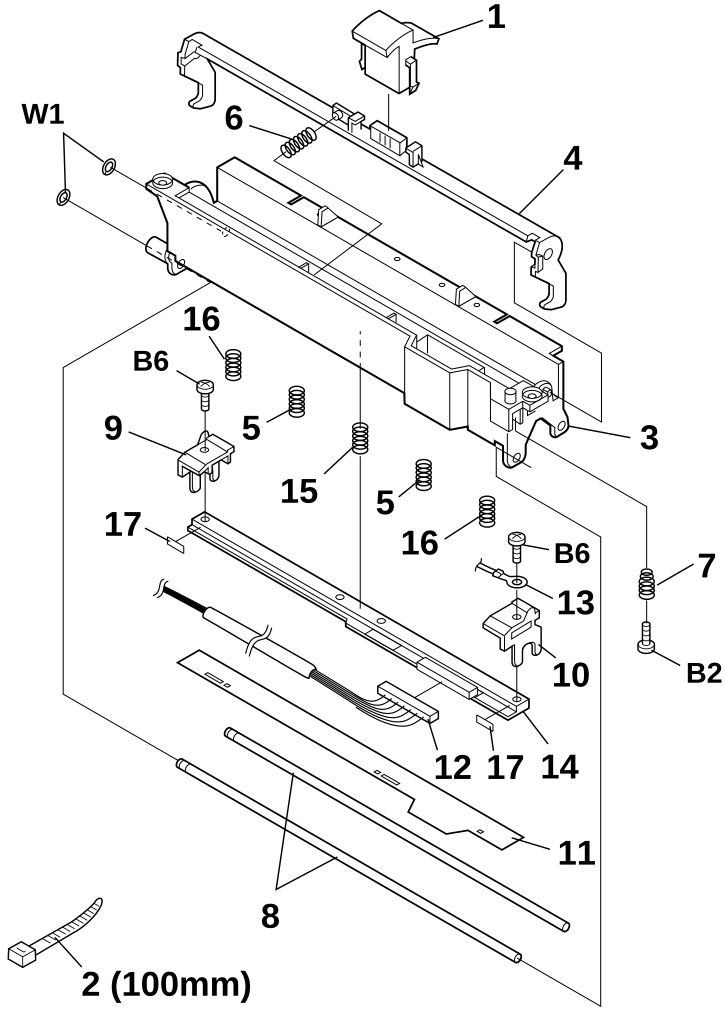
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[4] Optical unit					
1	DCEKD475AAX05	BE		E	CCD PWB unit
2	LFRM-2164XHAA	AF	N	C	Optical frame
3	MSPRP2817SCZZ	AC		C	Lens holding spring
4	PFLT-2006XHZZ	AA		C	Felt
5	PGLSP2058XHZZ	AE		C	Reader glass
6	PLNS-2049XHZZ	AZ		C	Lens
7	PMIR-2070XHZZ	AG		C	Mirror 1
8	PMIR-2071XHZZ	AH		C	Mirror 2
9	PMIR-2072XHZZ	AH		C	Mirror 3
10	PSHEZ3196AXZZ	AC		C	Shading sheet
12	PSHEZ3258AXZZ	AD		C	Shading sheet 3
13	QCNW-395AXHZZ	AD	N	C	LED cable
14	VHPSNK15A24-1	AZ		B	LED
15	PCUSS2124XHZZ	AA	N	C	Cushion,optical frame
17	PSHEP3606XHZZ	AA	N	C	Mirror sheet 2
B8	LX-BZ2182SCZZ	AB		C	Screw
	(Unit)				
901	DCYOD475AXH03	BN	N	E	Optical unit

[5] Drive unit



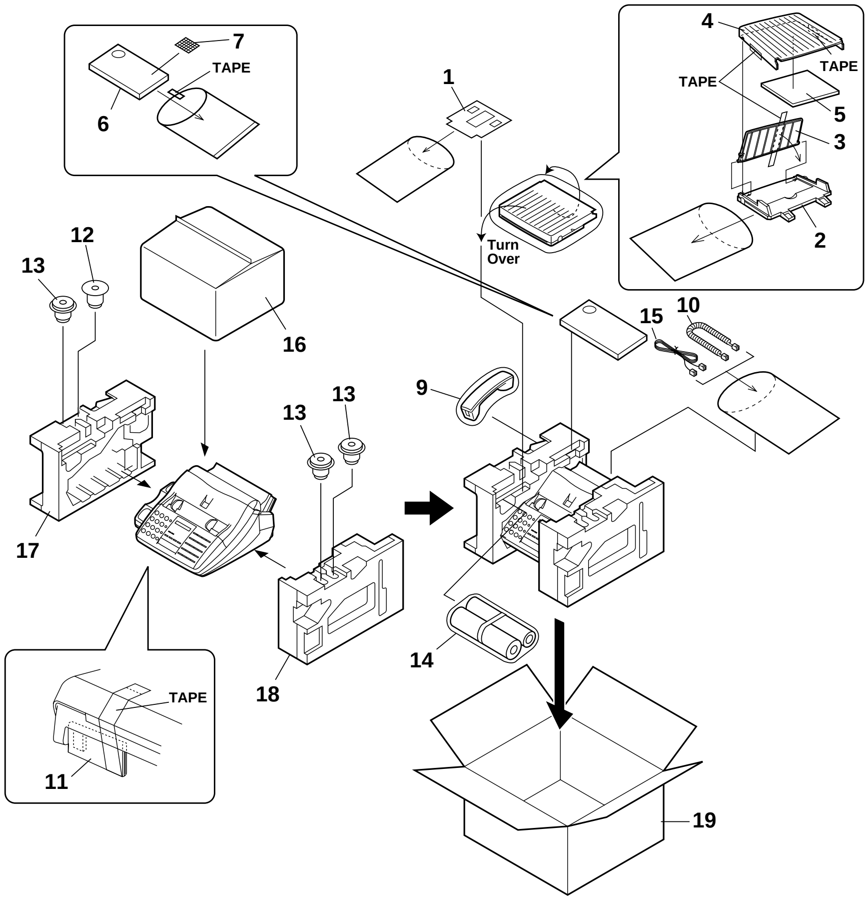
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[5] Drive unit					
1	CLEVP2254AX01	AE		C	Planet lever A ass'y
2	CLEVP2255AX01	AE		C	Planet lever B ass'y
3	CLEVP2256AX01	AE		C	Planet lever C ass'y
4	LFRM-2181AXZZ	AV		C	Drive unit frame
5	LPLTM2886AXFW	AQ		C	Motor heat sink
6	MCAMP2023AXZZ	AD		C	Cam A
7	MSPRD2962AXFJ	AC		C	Cam hold spring
8	NGERH2279XHZZ	AC		C	Idler gear A
9	NGERH2281XHZZ	AD		C	Idler gear C
10	NGERH2361AXZZ	AE		C	Reduction gear A
11	NGERH2362AXZZ	AE		C	Reduction gear C
12	QCNW-394AXHZZ	AD	N	C	Cam switch cable
13	QSW-F2224SCZZ	AE		C	Cam switch
14	RMOTZ2161XHZZ	AX	N	B	Motor
15	NGERH2360AXZZ	AE		C	Reduction gear B
16	PCUSG2111XHZZ	AE		C	Cushion
17	LBNDJ2006XHZZ	AA		C	Band
B2	XEBSD30P10000	AA		C	Screw(3x10)

[6] Head unit



NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[6] Head unit					
1	JKNBP2074XHYA	AD	N	C	Release knob [510UA]
	JKNBP2074XHYB	AC	N	C	Release knob [1470U]
2	LBNDJ2006XHZZ	AA		C	Band(100mm)
3	LFRM-2179XHZA	AK	N	C	Head frame
4	MLEVP2248AXZZ	AD		C	Lock lever
5	MSPRC2964AXFJ	AD		C	Head spring B
6	MSPRC2920AXFJ	AC		C	Lock spring
7	MSPRC2928AXFJ	AC		C	Pop up spring
8	NSFTM2278AXZZ	AH		C	Film guide shaft
9	PGIDM2519XHZL	AN		C	Head guide,left
10	PGIDM2478AXZR	AD		C	Head guide,right
11	PSHEZ3292AXZZ	AE		C	Head guide sheet
12	QCNW-392AXHZZ	AM	N	C	Head cable
13	QCNW-393AXHZZ	AE	N	C	Head earth cable
14	RHEDZ2063XHZZ	BQ	N	B	Termal head
15	MSPRC3210XHZZ	AE	N	C	Head spring 1
16	MSPRC3212XHZZ	AD	N	C	Head spring 2
17	PSHEZ3366XHZZ	AD		C	Head sheet
B2	XEBSD30P10000	AA		C	Screw(3x10)
B6	XBBSD30P06000	AA		C	Screw(3x6)
W1	LX-WZ2228AXZZ	AB		C	Cut washer

[7] Packing material & Accessories



NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[7] Packing material & Accessories					
1	TCADZ3055XHZZ	AN	N	D	Pop card
2	LPLTP2889XHYA	AM	N	C	Paper tray A [510UA]
	LPLTP2889XHYB	AE	N	C	Paper tray A [1470U]
3	LPLTP2890XHYA	AM	N	C	Paper tray B [510UA]
	LPLTP2890XHYB	AE	N	C	Paper tray B [1470U]
4	PCOVA2115XHSB	AE	N	C	Paper tray cover [510UA]
	PCOVA2115XHSA	AL		C	Paper tray cover [1470U]
5	SPAKA328CXHZZ	AC	N	D	Protection pad,paper tray
6	TINSE4157XHTZ	AK	N	D	Operation manual [510UA]
	TINSE4162XHTZ	AL	N	D	Operation manual [1470U]
7	TLABH276CXHZZ	AD	N	D	Rapid key labels
9	DUNTK464BXHFW	AX	N	E	Handset [510UA]
	DUNTK464BXHOG	AP		E	Handset [1470U]
⚠ 10	QCNW-289ASCOW	AG		C	Handset cord [510UA]
⚠	QCNW-289ASCOG	AG		C	Handset cord [1470U]
11	SPAKA213AAXZZ	AC		D	Protection sheet
12	LBSHP2078XHZZ	AC		C	Imaging film frange
13	NGERH2315XHZZ	AE		C	Imaging film gear
14	PRBNN2009SCZZ	AV		S	Imaging film(Initial starter film 20m)
⚠ 15	QCNW-290ASCZZ	AE		C	Telephone line cord
16	SPAKP4381AXZZ	AG		D	Vinyl cover
17	SPAKA261CXHZZ	AC	N	D	Packing add.,left
18	SPAKA262CXHZZ	AC	N	D	Packing add.,right
19	SPAKC263CXHZZ	AG	N	D	Packing case [510UA]
	SPAKC300CXHTZ	AK	N	D	Packing case [1470U]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[8] Control PWB unit					
1	UBATL2049SCZZ	AF		B	Battery(CR2032T23) [BAT1]
2	VCEAGA1EW476M	AA		C	Capacitor(25WV 47µF) [C1]
3	VCEAGA1HW226M	AB		C	Capacitor(50WV 22µF) [C2]
4	VCEAGA1HW106M	AA		C	Capacitor(50WV 10µF) [C3]
5	VCEAGA1HW107M	AA		C	Capacitor(50WV 100µF) [C4]
6	VCEAGA0JW227M	AD		C	Capacitor(6.3WV 220µF) [C5]
7	VCEAGA0JW227M	AD		C	Capacitor(6.3WV 220µF) [C6]
8	VCEAGA1HW107M	AA		C	Capacitor(50WV 100µF) [C7]
9	VCEAGA1HW226M	AB		C	Capacitor(50WV 22µF) [C8]
10	VCEAGA1EW476M	AA		C	Capacitor(25WV 47µF) [C11]
11	VCEAGA1HW106M	AA		C	Capacitor(50WV 10µF) [C12]
12	VCEAGA1HW107M	AA		C	Capacitor(50WV 100µF) [C13]
13	VCEAGA1HW106M	AA		C	Capacitor(50WV 10µF) [C14]
14	VCEAGA1HW106M	AA		C	Capacitor(50WV 10µF) [C15]
15	VCKYCY1EF104Z	AA		C	Capacitor(25WV 0.1µF) [C100]
16	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF) [C101]
17	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF) [C102]
18	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.1µF) [C104]
19	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF) [C105]
20	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF) [C107]
21	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF) [C109]
22	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF) [C110]
23	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF) [C111]
24	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF) [C112]
25	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF) [C113]
26	VCKYTV1CF225Z	AD		C	Capacitor(16WV 2.2µF) [C114]
27	VCCCCY1HH180J	AA		C	Capacitor(50WV 18PF) [C115]
28	VCCCCY1HH330J	AA		C	Capacitor(50WV 33PF) [C116]
29	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF) [C117]
30	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF) [C118]
31	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.1µF) [C125]
32	VCKYCY1EF104Z	AA		C	Capacitor(25WV 0.1µF) [C126]
33	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF) [C127]
34	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF) [C128]
35	VCKYCY1EF104Z	AA		C	Capacitor(25WV 0.1µF) [C129]
36	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF) [C130]
37	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF) [C131]
38	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF) [C132]
39	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF) [C133]
40	VCKYTV1CF225Z	AD		C	Capacitor(16WV 2.2µF) [C134]
41	VCKYCY1EF104Z	AA		C	Capacitor(25WV 0.1µF) [C135]
42	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF) [C136]
43	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF) [C137]
44	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF) [C138]
45	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF) [C139]
46	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF) [C140]
47	VCKYTV1CF225Z	AD		C	Capacitor(16WV 2.2µF) [C141]
48	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF) [C142]
49	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF) [C143]
50	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF) [C144]
51	VCKYTV1CF225Z	AD		C	Capacitor(16WV 2.2µF) [C146]
52	VCKYTV1CF225Z	AD		C	Capacitor(16WV 2.2µF) [C147]
53	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF) [C148]
54	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF) [C149]
55	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF) [C150]
56	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF) [C151]
57	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF) [C152]
58	VCKYCY1EF104Z	AA		C	Capacitor(25WV 0.1µF) [C154]
59	VCKYTV1CF225Z	AD		C	Capacitor(16WV 2.2µF) [C157]
60	VCKYTV1CF225Z	AD		C	Capacitor(16WV 2.2µF) [C158]
61	VCKYTV1CF225Z	AD		C	Capacitor(16WV 2.2µF) [C159]
62	VCKYTV1CF225Z	AD		C	Capacitor(16WV 2.2µF) [C160]
63	VCKYTV1CF225Z	AD		C	Capacitor(16WV 2.2µF) [C161]
64	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF) [C163]
65	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF) [C164]
66	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%) [C168]
67	VCKYCY1HB103K	AA		C	Capacitor(50WV 0.01µF) [C169]
68	VCKYCY1HB472K	AA		C	Capacitor(50WV 4700PF) [C170]
69	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF) [C171]
70	VCCCCY1HH150J	AB		C	Capacitor(50WV 15PF) [C174]
71	VCCCCY1HH150J	AB		C	Capacitor(50WV 15PF) [C175]
72	VCKYCY1EF104Z	AA		C	Capacitor(25WV 0.1µF) [C176]
73	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF) [C177]
74	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF) [C178]
75	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF) [C179]
76	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF) [C180]
77	VCKYCY1EF104Z	AA		C	Capacitor(25WV 0.1µF) [C182]
78	VCCCCY1HH150J	AB		C	Capacitor(50WV 15PF) [C183]
79	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.1µF) [C185]
80	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%) [C186]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[8] Control PWB unit						
81	VCKYCY1CB104K	AB		C	Capacitor(16WV 0.1µF)	[C188]
82	VCKYCY1CB104K	AB		C	Capacitor(16WV 0.1µF)	[C189]
83	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF)	[C190]
84	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[C191]
85	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF)	[C192]
86	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[C196]
87	VCKYCY1EF104Z	AA		C	Capacitor(25WV 0.1µF)	[C197]
88	VCKYCY1CB104K	AB		C	Capacitor(16WV 0.1µF)	[C198]
89	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[C207]
90	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[C214]
91	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF)	[C216]
92	VCCCCY1HH221J	AA		C	Capacitor(50WV 220PF)	[C218]
93	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF)	[C219]
94	VCKYCY1EF104Z	AA		C	Capacitor(25WV 0.1µF)	[C220]
95	VCKYCY1EF104Z	AA		C	Capacitor(25WV 0.1µF)	[C221]
96	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF)	[C223]
97	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF)	[C224]
98	VCTYPA1HF104Z	AC		C	Capacitor(50WV 0.1µF)	[C227]
99	QCNCM7014SC0G	AB		C	Connector(7pin)	[CNCCD]
100	QCNCM2442SC0B	AB		C	Connector(2pin)	[CNCSW]
101	QCNCM7014SC0B	AD		C	Connector(2pin)	[CNLED]
102	QCNCM2499SC1D	AG		C	Connector(14pin)	[CNLIUA]
103	QCNCM7014SC0F	AB		C	Connector(6pin)	[CNMT]
104	QCNCM7014SC1E	AC		C	Connector(15pin)	[CNPN]
105	QCNCM2499SC0F	AF		C	Connector(6pin)	[CNPW]
106	QCNCM2401SC0B	AA		C	Connector(2pin)	[CNSP]
107	QCNCM7014SC1F	AD		C	Connector(16pin)	[CNTH]
108	VHE1N4748A/-1	AC		B	Diode(1N4748A)	[D1]
109	VHD1SS355//-1	AB		B	Diode(1SS355)	[D100]
110	VHD1SS355//-1	AB		B	Diode(1SS355)	[D101]
111	VHDHRW0202B-1	AD		B	Diode(HRW0202B)	[D102]
112	VHD1SS355//-1	AB		B	Diode(1SS355)	[D103]
113	VHD1SS355//-1	AB		B	Diode(1SS355)	[D104]
114	VHD1SS355//-1	AB		B	Diode(1SS355)	[D105]
115	VHD1SS355//-1	AB		B	Diode(1SS355)	[D106]
116	QFS-P2010SCZZ	AD		B	IC protector(KAB2402)	[FU100]
117	VHITD62001AP1	AE		B	IC(TD62001AP)	[IC1]
118	RH-IX2202SCZZ	AM	N	B	IC(HCT244)	[IC2]
119	RH-IX2203SCZZ	AH	N	B	IC(LV125A)	[IC3]
120	QSOCZ2051SC32	AC		C	IC socket(32pin)	[IC4]
121	VHI27020FPS0B	BN	N	B	IC,EPROM(2MB)	[IC4]
122	RH-IX2168SCZZ	BB		B	IC(MSM51V4800E)	[IC5]
123	VHIW24258S7LE	AQ		B	IC(W24258S-70LE)	[IC8]
124	VHISCE114//-1	BG		B	IC(SCE114)	[IC9](Within IC9 and IC13 pair)
125	RH-IX2201SCZZ	AG	N	B	IC(HCT04)	[IC10]
126	VHINJM318M/-F	AF		B	IC(NJM318M)	[IC11]
127	VHISCE114//-1	BG		B	IC(20415)	[IC13](Within IC9 and IC13 pair)
128	VHINJM2113M-1	AG		B	IC(NJM2113)	[IC15]
129	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[L101]
130	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[L107]
131	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[L112]
132	VRS-TS2AD000J	AA		C	Resistor(1/10W 0Ω ±5%)	[L116]
133	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[L118]
134	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[L119]
135	VHPSG206S//-1	AG		B	Photo transistor(SG206S)	[PI1]
136	VHPSG206S//-1	AG		B	Photo transistor(SG206S)	[PI2]
137	VSDTC143ZK/-1	AD		B	Transistor(DTC143ZK)	[Q100]
138	VSDTC143ZK/-1	AD		B	Transistor(DTC143ZK)	[Q102]
139	VSRNC1402//-1	AC		B	Transistor(RNC1402)	[Q104]
140	VSRNC1402//-1	AC		B	Transistor(RNC1402)	[Q105]
141	VRS-RE3AA102J	AA		C	Resistor(1W 1.0KΩ ±5%)	[R1]
142	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ±5%)	[R101]
143	VRS-CY1JB474J	AA		C	Resistor(1/16W 470KΩ ±5%)	[R102]
144	VRS-CY1JB103J	AA		C	Resistor(1/16W 10KΩ ±5%)	[R104]
145	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R106]
146	VRS-CY1JB562J	AA		C	Resistor(1/16W 5.6KΩ ±5%)	[R107]
147	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ±5%)	[R108]
148	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ±5%)	[R109]
149	VRS-CY1JB106J	AA		C	Resistor(1/16W 10MΩ ±5%)	[R113]
150	VRS-CY1JB223J	AA		C	Resistor(1/16W 22KΩ ±5%)	[R115]
151	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R116]
152	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R117]
153	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R119]
154	VRS-CY1JB513J	AA		C	Resistor(1/16W 51KΩ ±5%)	[R120]
155	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R123]
156	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R124]
157	VRS-CY1JB103J	AA		C	Resistor(1/16W 10KΩ ±5%)	[R125]
158	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R127]
159	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ±5%)	[R128]
160	VRS-CY1JB224J	AA		C	Resistor(1/16W 220KΩ ±5%)	[R129]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[8] Control PWB unit						
161	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ±5%)	[R130]
162	VRS-CY1JB103J	AA		C	Resistor(1/16W 10KΩ ±5%)	[R131]
163	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R132]
164	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ±5%)	[R133]
165	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ±5%)	[R134]
166	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ±5%)	[R135]
167	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ±5%)	[R136]
168	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R137]
169	VRS-CY1JB223J	AA		C	Resistor(1/16W 22KΩ ±5%)	[R139]
170	VRS-CY1JB103J	AA		C	Resistor(1/16W 10KΩ ±5%)	[R140]
171	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ±5%)	[R141]
172	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ±5%)	[R142]
173	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ±5%)	[R143]
174	VRS-CY1JB102J	AA		C	Resistor(1/16W 1KΩ ±5%)	[R144]
175	VRS-CY1JB471J	AA		C	Resistor(1/16W 470Ω ±5%)	[R146]
176	VRS-CY1JB203J	AA		C	Resistor(1/16W 20KΩ ±5%)	[R151]
177	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ±5%)	[R152]
178	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ±5%)	[R153]
179	VRS-CY1JB471J	AA		C	Resistor(1/16W 470Ω ±5%)	[R154]
180	VRS-CY1JB471J	AA		C	Resistor(1/16W 470Ω ±5%)	[R155]
181	VRS-CY1JB101J	AA		C	Resistor(1/16W 100Ω ±5%)	[R160]
182	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R163]
183	VRS-CY1JB104J	AA		C	Resistor(1/16W 100KΩ ±5%)	[R164]
184	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R165]
185	VRS-CY1JB102J	AA		C	Resistor(1/16W 1KΩ ±5%)	[R166]
186	VRS-CY1JB203J	AA		C	Resistor(1/16W 20KΩ ±5%)	[R168]
187	VRS-CY1JB221J	AA		C	Resistor(1/16W 220Ω ±5%)	[R170]
188	VRS-CY1JB105J	AA		C	Resistor(1/16W 1MΩ ±5%)	[R171]
189	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ±5%)	[R172]
190	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ±5%)	[R173]
191	VRS-CY1JB102J	AA		C	Resistor(1/16W 1KΩ ±5%)	[R175]
192	VRS-CY1JB333J	AA		C	Resistor(1/16W 33KΩ ±5%)	[R176]
194	VRS-CY1JB472J	AA		C	Resistor(1/16W 4.7KΩ ±5%)	[R178]
195	VRS-CY1JB393J	AA		C	Resistor(1/16W 39KΩ ±5%)	[R179]
196	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R180]
197	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R181]
198	VRS-CY1JB472J	AA		C	Resistor(1/16W 4.7KΩ ±5%)	[R182]
199	VRS-CY1JB113J	AA		C	Resistor(1/16W 11KΩ ±5%)	[R183]
200	VRS-CY1JB104J	AA		C	Resistor(1/16W 100KΩ ±5%)	[R184]
201	VCCCCY1HH221J	AA		C	Capacitor(50WV 220PF)	[R185]
202	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R188]
203	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R189]
204	VRS-CY1JB104J	AA		C	Resistor(1/16W 100KΩ ±5%)	[R190]
205	VRS-CY1JB302J	AA		C	Resistor(1/16W 3KΩ ±5%)	[R195]
206	VRS-CY1JB433J	AA		C	Resistor(1/16W 43KΩ ±5%)	[R196]
207	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R198]
208	VRS-CY1JB102J	AA		C	Resistor(1/16W 1KΩ ±5%)	[R200]
209	VRS-CY1JB222J	AA		C	Resistor(1/16W 2.2KΩ ±5%)	[R201]
210	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R202]
211	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ±5%)	[R203]
212	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ±5%)	[R204]
213	VRS-TS2AD000J	AA		C	Resistor(1/10W 0Ω ±5%)	[R205]
214	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ±5%)	[R206]
215	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R207]
216	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R208]
217	VCCCCY1HH221J	AA		C	Capacitor(50WV 220PF)	[R209]
218	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R210]
219	VRS-CY1JB224J	AA		C	Resistor(1/16W 220KΩ ±5%)	[R212]
220	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R213]
221	VRS-CY1JB103J	AA		C	Resistor(1/16W 10KΩ ±5%)	[R220]
222	VRS-CY1JB103J	AA		C	Resistor(1/16W 10KΩ ±5%)	[R221]
223	VRS-CY1JB103J	AA		C	Resistor(1/16W 10KΩ ±5%)	[R222]
224	RR-TZ3018SCZZ	AC		B	Resistor array(470Ωx4)	[RA1]
225	RR-TZ3017SCZZ	AC		B	Resistor array(270Ωx4)	[RA2]
226	RR-TZ3017SCZZ	AC		B	Resistor array(270Ωx4)	[RA3]
227	RR-TZ3017SCZZ	AC		B	Resistor array(270Ωx4)	[RA4]
228	RR-TZ3018SCZZ	AC		B	Resistor array(470Ωx4)	[RA5]
229	RR-TZ3018SCZZ	AC		B	Resistor array(470Ωx4)	[RA6]
230	RR-TZ3017SCZZ	AC		B	Resistor array(270Ωx4)	[RA7]
231	RR-TZ3017SCZZ	AC		B	Resistor array(270Ωx4)	[RA8]
232	RR-TZ3017SCZZ	AC		B	Resistor array(270Ωx4)	[RA9]
233	RR-TZ3017SCZZ	AC		B	Resistor array(270Ωx4)	[RA10]
234	RR-TZ3029SCZZ	AB		B	Resistor array(1KΩx4)	[RA11]
235	RR-TZ3017SCZZ	AC		B	Resistor array(270Ωx4)	[RA12]
236	RR-TZ3017SCZZ	AC		B	Resistor array(270Ωx4)	[RA13]
237	RR-TZ3018SCZZ	AC		B	Resistor array(470Ωx4)	[RA14]
238	VHI62FP332P-1	AF		B	IC(XC62FP3302P)	[REG1]
239	RRLYD3130SCZZ	AN		B	Relay(OJE-SH-124DM)	[RY1]
240	RCRSB0297AFZZ	AD		B	Crystal(32.768kHz)	[X1]
241	RCRSQ2157SCZZ	AF		B	Crystal(32.256MHz)	[X2]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[8] Control PWB unit					
242	QCNW-4358XH95	AA	N	C	Jumper wire
	(Unit)				
901	DCEKC281PXHZZ	BU	N	E	Control PWB unit(Within ROM)
[9] TEL/LIU PWB unit					
1	VHVRA391PV6-1	AE		B	Varistor(RA-391P-V6-2) [AR1]
2	QCNW-4704XHZZ	AD		C	Cable [ARG]
3	VCEAGA1HW226M	AB		C	Capacitor(50WV 22µF) [C1]
4	VCEAGA1HW226M	AB		C	Capacitor(50WV 22µF) [C2]
5	VCEAGA1HW475M	AA		C	Capacitor(50WV 4.7µF) [C4]
6	VCEAGA1HW226M	AB		C	Capacitor(50WV 22µF) [C5]
7	VCEAGA1HW226M	AB		C	Capacitor(50WV 22µF) [C6]
8	RC-FZ3024SCZZ	AG		C	Capacitor(250WV 0.82µF) [C8]
9	VCEAGA1HW226M	AB		C	Capacitor(50WV 22µF) [C9]
10	VCEAGA1HW106M	AA		C	Capacitor(50WV 10µF) [C10]
11	VCEAGA1HW226M	AB		C	Capacitor(50WV 22µF) [C13]
12	VCKYCY1EF104Z	AA		C	Capacitor(25WV 0.1µF) [C101]
13	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.1µF) [C102]
14	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF) [C106]
15	VCKYCY1EB393K	AB		C	Capacitor(25WV 0.039µF) [C108]
16	VCCCCY1HH330J	AA		C	Capacitor(50WV 33PF) [C109]
17	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.1µF) [C110]
18	VCKYCY1HB821K	AA		C	Capacitor(50WV 820PF) [C112]
19	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1µF) [C113]
20	VCCCCY1HH330J	AA		C	Capacitor(50WV 33PF) [C114]
21	VCCCCY1HH221J	AA		C	Capacitor(50WV 220PF) [C115]
22	VCKYCY1HB222K	AA		C	Capacitor(50WV 2200PF) [C117]
23	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.1µF) [C118]
24	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF) [C119]
25	VCKYCY1CB104K	AB		C	Capacitor(16WV 0.1µF) [C123]
26	VCKYCY1HB103K	AA		C	Capacitor(50WV 0.01µF) [C124]
27	VCCCCY1HH221J	AA		C	Capacitor(50WV 220PF) [C125]
28	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF) [C126]
29	VCKYCY1HB222K	AA		C	Capacitor(50WV 2200PF) [C127]
30	RRLYD3433XHZZ	AH		B	Relay(OUAZ-SH-124DZ) [CML1]
31	QJAKZ2079XH0D	AD		C	Jack [CNHJ]
32	QCNCW2500SC1D	AG		C	Connector(14pin) [CNLIUA]
33	QJAKZ2046SCBB	AH		C	Jack [CNLNJ]
34	VHDDSS133//-1	AA		B	Diode(1SS133) [D1]
35	VHDDSS133//-1	AA		B	Diode(1SS133) [D2]
36	VHDDA204K//-1	AC		B	Diode(DA204K) [D101]
37	VHINJM2904M-2	AG		B	IC(NJM2904M) [IC101]
38	VHINJM2904M-2	AG		B	IC(NJM2904M) [IC102]
⚠ 39	RFILN2027XHZZ	AC		C	Coil(R-5C) [L1]
⚠ 40	RFILN2027XHZZ	AC		C	Coil(R-5C) [L2B]
⚠ 41	RFILN2027XHZZ	AC		C	Coil(R-5C) [L3]
⚠ 42	RFILN2027XHZZ	AC		C	Coil(R-5C) [L4]
⚠ 43	RFILN2027XHZZ	AC		C	Coil(R-5C) [L5]
⚠ 44	RFILN2027XHZZ	AC		C	Coil(R-5C) [L7]
⚠ 45	RFILN2027XHZZ	AC		C	Coil(R-5C) [L9]
46	VHPTLP521-1BL	AE		B	Photo coupler(TLP521) [PC4]
47	VSDTC143ZK/-1	AD		B	(DTC143ZK) [Q102]
48	VSDTC143ZK/-1	AD		B	(DTC143ZK) [Q104]
49	VS2SC2412KR-1	AD		B	Transistor(2SC2412KR) [Q105]
50	VRD-HT2HY223J	AA		C	Resistor(1/2W 22KΩ ±5%) [R5]
51	VRS-TS2AD102J	AA		C	Resistor(1/10W 1KΩ ±5%) [R105]
52	VRS-TS2AD101J	AA		C	Resistor(1/10W 100Ω ±5%) [R106]
53	VRS-CY1JB332J	AA		C	Resistor(1/16W 3.3KΩ ±5%) [R108]
54	VRS-TS2AD223J	AA		C	Resistor(1/10W 22KΩ ±5%) [R111]
55	VRS-CY1JB203J	AA		C	Resistor(1/16W 20KΩ ±5%) [R112]
56	VRS-CY1JB153J	AA		C	Resistor(1/16W 15KΩ ±5%) [R113]
57	VRS-CY1JB301J	AA		C	Resistor(1/10W 300Ω ±5%) [R114]
58	VRS-CY1JB473J	AA		C	Resistor(1/16W 47KΩ ±5%) [R115]
59	VRS-CY1JB621J	AA		C	Resistor(1/16W 620Ω ±5%) [R116]
60	VRS-CY1JB472J	AA		C	Resistor(1/16W 4.7KΩ ±5%) [R117]
61	VRS-CY1JB101J	AA		C	Resistor(1/16W 100Ω ±5%) [R118]
62	VRS-CY1JB203J	AA		C	Resistor(1/16W 20KΩ ±5%) [R120]
63	VRS-CY1JB102J	AA		C	Resistor(1/16W 1KΩ ±5%) [R121]
64	VRSTS2AD8662F	AA		C	Resistor(1/10W 86.6KΩ ±1%) [R122]
65	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%) [R123]
66	VRS-CY1JB332J	AA		C	Resistor(1/16W 3.3KΩ ±5%) [R124]
67	VRS-CY1JB224J	AA		C	Resistor(1/16W 220KΩ ±5%) [R125]
68	VRS-CY1JB151J	AA		C	Resistor(1/16W 150Ω ±5%) [R127]
69	VRS-CY1JB102J	AA		C	Resistor(1/16W 1KΩ ±5%) [R128]
70	VRS-CY1JB152J	AA		C	Resistor(1/16W 1.5KΩ ±5%) [R130]
71	VRS-CY1JB822J	AA		C	Resistor(1/16W 8.2KΩ ±5%) [R131]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[9] TEL/LIU PWB unit						
72	VRS-CY1JB393J	AA		C	Resistor(1/16W 39KΩ ±5%)	[R132]
73	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R133]
74	VRS-CY1JB102J	AA		C	Resistor(1/16W 1KΩ ±5%)	[R134]
75	VRS-CY1JB103J	AA		C	Resistor(1/16W 10KΩ ±5%)	[R135]
76	VRS-CY1JB332J	AA		C	Resistor(1/16W 3.3KΩ ±5%)	[R136]
77	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R137]
78	VRS-CY1JB203J	AA		C	Resistor(1/16W 20KΩ ±5%)	[R138]
79	VRS-CY1JB203J	AA		C	Resistor(1/16W 20KΩ ±5%)	[R139]
80	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R140]
81	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ±5%)	[R141]
82	QSW-Z2226SCZZ	AG		C	Door switch	[SW1]
83	QSW-Z2263XHZZ	AG		C	Hook switch	[SW2]
84	RTRNI2164XHZZ	AG		B	Transformer(I2164)	[T1]
85	VHVERZV5D471/	AC		B	Varistor(ERZV5D471)	[VA2]
86	VHVERZV5D471/	AC		B	Varistor(ERZV5D471)	[VA3]
87	VHEHZ2C1///-1	AA		B	Zener diode(HZ2C1)	[ZD4]
88	VHEHZ2C1///-1	AA		B	Zener diode(HZ2C1)	[ZD5]
89	VHEHZ27-1//-1	AB		B	Zener diode(HZ27)	[ZD6]
90	VHEMTZJ5R1B-1	AB	N	B	Zener diode(MTZJ5.1B)	[ZD7]
	(Unit)					
901	DCEKL266CXH01	BC	N	E	TEL/LIU PWB unit	
[10] Power supply PWB unit						
1	0CBUGZ1274ZZ/	AD	N	C	Capacitor(R46KI3110M)	[C1]
2	0CBUGAL151SM/	AL		C	Capacitor(KMF200VB-150(M)VV-18)	[C2]
3	0CBUGCU681EL/	AD	N	C	Capacitor(CC45SL3AD681JYNN)	[C3]
4	0CBUGXGCF152/	AF	N	C	Capacitor(GRM39B152K50PT)	[C4]
5	0CBUGFF472EH/	AD		C	Capacitor(AMZ-472J50)	[C5]
6	0CBUEXCAA000/	AB		C	Resistor(MCR10EZHJ000)	[C6]
7	0CBUGAE331TS/	AH		C	Capacitor(LXJ35VB330(M)MC-10)	[C8]
8	0CBUGAC331TR/	AF		C	Capacitor(LXJ16VB330(M)FT-8)	[C10]
9	0CBUGXGCF104/	AD	N	C	Capacitor(GRM39B104K50PT)	[C12]
10	0CBUGCS152JG/	AD	N	C	Capacitor(DD08-959B152K500)	[C13]
11	0CBUGCD104DT/	AD	N	C	Capacitor(DD410-959SR104M25)	[C16]
12	0CBUGXGCF102/	AD	N	C	Capacitor(GRM39B102K50PT)	[C17]
13	0CBUGCU472BW/	AD	N	C	Capacitor(DE0905-959E472Z1K)	[C23]
14	0CBUGXGDF271/	AD	N	C	Capacitor(GRM39CH271J50PT)	[C24]
15	0CBUGZ1274ZZ/	AD	N	C	Capacitor(R46KI3110M)	[C25]
16	0CBUGCM332BJ/	AF		C	Capacitor(DE1410-1E332M-KX)	[C26]
17	0CBPKZ1219ZZ/	AD		C	Base post ass'y(THL-P03P B1)	[CN1]
18	0CBPKZ1251ZZ/	AH	N	C	Connector(06R-FJ)	[CN2]
19	0CBUBY0020AK/	AD		B	Diode(1SS355TE-17)	[D5]
20	0CBUBC0336AZ/	AL		B	Diode(S3L20U-4004P15)	[D7]
21	0CBUBC0304AZ/	AE		B	Diode(AK04-V0)	[D8]
22	0CBUBC0169CL/	AE	N	B	Diode(ERA22-06V3)	[D9]
23	0CBUBB0248EZ/	AD	N	B	Diode stack(S1WB(A)60B-4102)	[DS1]
24	0CBPJCSX2501/	AH		A	Current fuse(23702.5 ME600)	[F1]
25	0CBPZZ0906ZZ/	AH		A	Circuit protect(CCP2E100)	[F3]
26	0CBBFZ89256Z/	AD		B	Beads core(BL02RN1-R62T4)	[FB1]
27	0CBUCB0111AZ/	AM		B	IC(UPC78M05AHF)	[IC1]
28	0CBUKZ0790ZZ/	AK		C	Filter(ELF15N005A)	[L1]
29	0CBLRZ6708ZQ/	AQ	N	C	Heat sink(MN001-5001AT)	[MT1]
30	0CBLRZ6709ZQ/	AQ	N	C	Heat sink(MN001-5002AT)	[MT2]
31	0CBUDC0062MZ/	AG		B	Photo coupler(PS2501-1L)	[PC1]
32	0CBUAG0161EZ/	AQ		B	FET(FS5KM-14-AN)	[Q1]
33	0CBUAC0255AM/	AD	N	B	Transistor(2SC4115S QR TP)	[Q2]
34	0CBUAC0264AK/	AD	N	B	Transistor(2SC1741AS TP QR)	[Q3]
35	0CBUAC0034EL/	AD	N	B	Transistor(2SC1740S-TP)	[Q4]
36	0CBUEEC225CF/	AC	N	C	Resistor(RD50SS-T26-225J)	[R1]
37	0CBUEEB474DJ/	AC	N	C	Resistor(RDM14TS474J)	[R2]
38	0CBUEEB474DJ/	AC	N	C	Resistor(RDM14TS474J)	[R3]
39	0CBUEXDAA561/	AC	N	C	Resistor(MCR18EZHJ561)	[R4]
40	0CBUEXCAA682/	AC	N	C	Resistor(MCR10EZHJ682)	[R5]
41	0CBUEXCAA473/	AC	N	C	Resistor(MCR10EZHJ473)	[R6]
42	0CBUEXCAA181/	AC	N	C	Resistor(MCR10EZHJ181)	[R7]
43	0CBUEXCAA473/	AC	N	C	Resistor(MCR10EZHJ473)	[R8]
44	0CBUEXCAA471/	AC	N	C	Resistor(MCR10EZHJ471)	[R9]
45	0CBUEFDR15DB/	AE		C	Resistor(RSMF1TBR15G)	[R10]
46	0CBUEXCAA472/	AC	N	C	Resistor(MCR10EZHJ472)	[R13]
47	0CBUEXCAA102/	AC	N	C	Resistor(MCR10EZHJ102)	[R14]
48	0CBUEXCAA334/	AC	N	C	Resistor(MCR10EZHJ334)	[R15]
49	0CBUEYAA2202/	AC	N	C	Resistor(MCR10EZHF2202)	[R16]
50	0CBUEYAA8201/	AC	N	C	Resistor(MCR10EZHF8201)	[R17]
51	0CBUEXDAA332/	AC	N	C	Resistor(MCR18EZHJ332)	[R18]
52	0CBUEFE104DH/	AD		C	Resistor(SPR2-T52-104J)	[R24]
53	0CB829655033/	BE	N	B	Transformer(PTTN117-KTT)	[T1]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[10] Power supply PWB unit						
54	0CBUEZ0666ZZ/	AD	N	B	Varistor(S07K150GA)	[V1]
55	0CBUFBA102EE/	AD		B	Variable resistor(EVN CYA A03 B13(102))	[VR1]
56	0CBUBXAD4R3C/	AD		B	Zener diode(RD4.3SB2-T1)	[ZD2]
57	0CBUBDBM300D/	AC		B	Zener diode(RD30FB3-T7)	[ZD4]
58	0CBUBXAD6R2C/	AD		B	Zener diode(RD6.2SB-T1)	[ZD5]
	(Unit)					
⚠ 901	RDENT2157XHZZ	BF	N	E	Power supply PWB unit	
[11] CCD PWB unit						
1	VCEAGA1HW226M	AB		C	Capacitor(50WV 22µF)	[C1]
2	VCKYPU1HF223Z	AA		C	Capacitor(50WV 0.022µF)	[C2]
3	QCNW-4692AXZZ	AH		C	Cable	[CN1]
4	VHITCD1208AP1	AX		B	IC(TCD1208AP)	[IC1]
5	VS2SC1815GR-1	AB		B	Transistor(2SC1815GR)	[Q1]
6	VRD-RC2EY222J	AA		C	Resistor(1/4W 2.2KΩ ±5%)	[R1]
7	VRD-RC2EY390J	AA		C	Resistor(1/4W 39Ω ±5%)	[R2]
	(Unit)					
901	DCEKD475AAX05	BE		E	CCD PWB unit	
[12] Operation panel PWB unit						
1	QSW-K0005AWZZ	AC		C	Tact switch	[SW]
2	QSW-M2246AXZZ	AH		C	FRSNS sensor	[FRSNS]
3	QSW-M2247AXZA	AE		C	ORGSNS sensor	[ORGSNS]
	(Unit)					
901	DCEKP351BXH02	BF	N	E	Operation panel PWB unit(Without sensor)	

■ Index

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
[C]				
CCNW-391AXH01	1-3	AK	N	C
CGERH2314AX51	1-59	AP		C
CGERH2363AX01	1-6	AK		C
CLEVP2254AX01	5-1	AE		C
CLEVP2255AX01	5-2	AE		C
CLEVP2256AX01	5-3	AE		C
CROLR2362AX01	1-45	AN		C
CROLR2363XH02	1-46	AK	N	C
[D]				
DCEKC281PXHZZ	1-4	BU	N	E
〃	8-901	BU	N	E
DCEKD475AAX05	4-1	BE		E
〃	11-901	BE		E
DCEKL266CXH01	1-5	BC	N	E
〃	9-901	BC	N	E
DCEKP264CXH01	1-1	BH	N	E
〃	2-901	BH	N	E
DCEKP264CXH02	1-1	AT	N	E
〃	2-901	AT	N	E
DCEKP351BXH02	2-1	BF	N	E
〃	12-901	BF	N	E
DCYOD475AXH03	4-901	BN	N	E
DUNTK464BXHFW	7-9	AX	N	E
DUNTK464BXHOG	7-9	AP		E
[G]				
GCABA2289XHYA	2-2	AR	N	D
GCABA2289XHYB	2-2	AE	N	D
GCABB2290XHAA	1-15	AZ	N	D
GCABB2290XHAB	1-15	AL	N	D
GCABC2291XHYA	1-75	AH	N	D
GCABC2291XHYB	1-75	AL	N	D
GCOVA2375XHYZ	1-76	AK	N	C
GCOVA2376XHYA	1-22	AP	N	C
GCOVA2376XHYB	1-22	AG	N	C
GCOVA2378AXZZ	1-77	AE		C
GLEGG2063AXZZ	1-79	AC		C
[H]				
HPNLH2405XHSA	1-99	AG	N	D
HPNLH2405XHSB	1-99	AC	N	D
[J]				
JBTN-2202AXSC	2-3	AG		C
JBTN-2202XHYA	2-3	AH	N	C
JBTN-2203AXSC	2-4	AF		C
JBTN-2203XHYA	2-4	AF	N	C
JBTN-2204AXSB	2-5	AD		C
JBTN-2204XHYA	2-5	AE	N	C
JBTN-2205AXSB	2-6	AD		C
JBTN-2205XHYA	2-6	AD	N	C
JBTN-2206XHYA	2-7	AE	N	C
JBTN-2206XHYB	2-7	AC	N	C
JKNBP2074XHYA	6-1	AD	N	C
JKNBP2074XHYB	6-1	AC	N	C
[L]				
LBNDJ2006XHZZ	1-13	AA		C
〃	5-17	AA		C
〃	6-2	AA		C
LBNDJ2008SCZZ	1-84	AA		C
LBSHP2078XHZZ	7-12	AC		C
LBSHP2086AXZZ	1-53	AC		C
LBSHP2088AXZZ	1-7	AC		C
LFRM-2164XHAA	4-2	AF	N	C
LFRM-2179XHZA	6-3	AK	N	C
LFRM-2180XHAZ	1-28	AX	N	C
LFRM-2181AXZZ	5-4	AV		C
LPLTG2707XHZZ	3-1	AE		C
LPLTM2791AXFW	1-29	AD		C
LPLTM2886AXFW	5-5	AQ		C
LPLTM2924XHFW	1-66	AQ		C
LPLTM3122XHZZ	1-97	AD	N	C
LPLTP2790XHZZ	3-2	AD		C
LPLTP2884AXZZ	1-30	AP		C
LPLTP2888XHYA	1-67	AG	N	C
LPLTP2888XHYB	1-67	AC	N	C
LPLTP2889XHYA	7-2	AM	N	C
LPLTP2889XHYB	7-2	AE	N	C
LPLTP2890XHYA	7-3	AM	N	C
LPLTP2890XHYB	7-3	AE	N	C
LPLTP2968XHZZ	1-93	AP		C
LSTPP2044XHZZ	1-31	AF		C
LX-BZ2138XHZZ	1-B7	AB		C
LX-BZ2182SCZZ	4-B8	AB		C
LX-BZ2222AXZZ	1-B3	AC		C
LX-WZ2228AXZZ	6-W1	AB		C
LX-WZ2228XHZZ	1-W1	AB		C
LX-WZ2246XHZZ	1-W2	AB		C
[M]				
MARMP2026XHZZ	3-17	AC	N	C
MCAMP2023AXZZ	5-6	AD		C
MLEVP2248AXZZ	6-4	AD		C
MLEVP2249XHYZ	1-32	AD	N	C
MLEVP2252XHYZ	1-33	AD	N	C
MLEVP2253XHYA	1-8	AD	N	C
MLEVP2257XHZA	3-3	AC	N	C
MLEVP2258XHYZ	1-34	AD	N	C
MSPRC2920AXFJ	6-6	AC		C
MSPRC2924AXFJ	3-4	AC		C
MSPRC2926AXFJ	1-68	AD		C
MSPRC2927AXFJ	1-37	AC		C
MSPRC2928AXFJ	6-7	AC		C
MSPRC2964AXFJ	6-5	AD		C
MSPRC2999XHFJ	1-35	AC		C
MSPRC3039XHFJ	1-17	AC		C
MSPRC3210XHZZ	6-15	AE	N	C
MSPRC3212XHZZ	6-16	AD	N	C
MSPRC3247XHZZ	1-36	AB	N	C
MSPRC3249XHZZ	1-23	AB	N	C
MSPRD2929AXFJ	1-38	AC		C
MSPRD2962AXFJ	5-7	AC		C
MSPRD3197XHZZ	3-5	AD	N	C
MSPRD3250XHZZ	1-60	AB	N	C
MSPRP2817SCZZ	4-3	AC		C
MSPRP3123XHZZ	1-98	AC		C
MSPRT2923AXFJ	3-6	AC		C
MSPRT2932AXFJ	1-69	AC		C
MSPRT3235XHZZ	3-7	AB	N	C
[N]				
NBRGP2141AXZZ	3-8	AC		C
NGERH2275XHZZ	1-9	AC		C
〃	3-9	AC		C
NGERH2279XHZZ	1-61	AC		C
〃	5-8	AC		C
NGERH2281XHZZ	5-9	AD		C
NGERH2309XHZZ	1-54	AC		C
NGERH2310XHZZ	1-39	AE		C
NGERH2315XHZZ	7-13	AE		C
NGERH2317XHZZ	3-10	AC		C
NGERH2356XHZZ	3-11	AC		C
NGERH2358AXZZ	1-55	AC		C
NGERH2359AXZZ	1-50	AD		C
NGERH2360AXZZ	5-15	AE		C
NGERH2361AXZZ	1-57	AE		C
〃	5-10	AE		C
NGERH2362AXZZ	5-11	AE		C
NGERH2365AXZZ	1-70	AD		C
NGERH2366AXZZ	1-71	AD		C
NGERH2367AXZZ	1-62	AD		C
NGERP2318XHZZ	1-24	AD		C
NROLP2332XHZZ	1-63	AD		C
NROLP2334XHZA	1-18	AC		C
〃	3-12	AC		C
NROLP2396XHZZ	1-94	AD		C
NROLR2333XHZZ	1-10	AP		C
NROLR2466XHZZ	3-13	AK	N	C
NROLR2467XHZZ	1-11	AM	N	C
NROLR2468XHZZ	1-58	AS	N	C
NSFTM2268XHYZ	1-51	AE	N	C
NSFTM2278AXZZ	6-8	AH		C
NSFTM2279AXZZ	1-64	AK		C
NSFTM2280AXZZ	1-40	AK		C
NSFTZ2257AXZZ	3-14	AE		C
NSFTZ2281XHZZ	1-19	AD		C
[P]				
PCOVA2114XHYZ	1-78	AE	N	C
PCOVA2115XHSA	7-4	AL		C
PCOVA2115XHSB	7-4	AE	N	C
PCUSG2111XHZZ	5-16	AE		C
PCUSG2112XHZZ	1-90	AE		C
PCUSS2114XHZZ	1-95	AD		C
PCUSS2124XHZZ	4-15	AA	N	C
PFLT-2006XHZZ	4-4	AA		C
PFLT-2009AXZZ	1-41	AD		C
PGIDM2478AXZR	6-10	AD		C
PGIDM2479XHYA	1-52	AK	N	C
PGIDM2480XHYA	1-72	AF	N	C
PGIDM2481XHYA	1-12	AP	N	C
PGIDM2481XHYB	1-12	AG	N	C
PGIDM2482XHAZ	3-15	AM	N	C
PGIDM2483XHYA	1-25	AE	N	C
PGIDM2483XHYB	1-25	AC	N	C
PGIDM2484XHYA	1-26	AE	N	C
PGIDM2484XHYB	1-26	AC	N	C
PGIDM2485XHYA	1-65	AC	N	C
PGIDM2519XHZL	6-9	AN		C
PGLSP2058XHZZ	4-5	AE		C
PHOP-2095XHYA	1-73	AM	N	C
PHOP-2095XHYB	1-73	AE	N	C
PLNS-2049XHZZ	4-6	AZ		C
PMIR-2070XHZZ	4-7	AG		C
PMIR-2071XHZZ	4-8	AH		C
PMIR-2072XHZZ	4-9	AH		C
PRBNN2009SCZZ	7-14	AV		S
PSEL-2015SCZZ	1-74	AB		C
PSHEP3606XHZZ	4-17	AA	N	C
PSHEZ3196AXZZ	4-10	AC		C
PSHEZ3258AXZZ	4-12	AD		C
PSHEZ3290AXZZ	3-16	AD		C
PSHEZ3291AXZZ	2-8	AD		C
PSHEZ3292AXZZ	6-11	AE		C
PSHEZ3293AXZZ	1-43	AH		C
PSHEZ3332AXZZ	1-81	AE		C
PSHEZ3341AXZZ	1-86	AC		C
PSHEZ3342AXZZ	1-87	AC		
PSHEZ3344AXZZ	1-42	AD		C
PSHEZ3366XHZZ	6-17	AD		C
PSHEZ3563XHZZ	1-80	AB	N	C
[Q]				
QACCD2054XHZZ	1-20	AP	N	B
QCNCM2401SC0B	8-106	AA		C
QCNCM2442SC0B	8-100	AB		C
QCNCM2499SC0F	8-105	AF		C
QCNCM2499SC1D	8-102	AG		C
QCNCM7014SC0B	8-101	AD		C
QCNCM7014SC0F	8-103	AB		C
QCNCM7014SC0G	8-99	AB		C
QCNCM7014SC1E	8-104	AC		C
QCNCM7014SC1F	8-107	AD		C
QCNCW2500SC1D	9-32	AG		C
QCNW-289ASCOG	7-10	AG		C
QCNW-289ASCOW	7-10	AG		C
QCNW-290ASCZZ	7-15	AE		C
QCNW-390AXHZZ	1-2	AK	N	C
〃	2-11	AK	N	C
QCNW-392AXHZZ	6-12	AM	N	C
QCNW-393AXHZZ	6-13	AE	N	C
QCNW-394AXHZZ	5-12	AD	N	C
QCNW-395AXHZZ	4-13	AD	N	C
QCNW-4358XH95	8-242	AA	N	C
QCNW-4692AXZZ	11-3	AH		C
QCNW-4704XHZZ	9-2	AD		C
QFS-P2010SCZZ	8-116	AD		B
QJAKZ2046SCBB	9-33	AH		C
QJAKZ2079XH0D	9-31	AD		C
QSOCZ2051SC32	8-120	AC		C
QSW-F2224SCZZ	5-13	AE		C
QSW-K0005AWZZ	12-1	AC		C
QSW-M2246AXZZ	2-9	AH		C
〃	12-2	AH		C
QSW-M2247AXZA	2-10	AE		C
〃	12-3	AE		C
QSW-Z2226SCZZ	9-82	AG		C
QSW-Z2263XHZZ	9-83	AG		C
[R]				
RC-FZ3024SCZZ	9-8	AG		C
RCORF2125XHZZ	1-14	AE		B
RCRSB0297AFZZ	8-240	AD		B
RCRSQ2157SCZZ	8-241	AF		B
RDENT2157XHZZ	1-21	BF	N	E
〃	10-901	BF	N	E
RFILN2027XHZZ	9-39	AC		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
RFILN2027XHZZ	9-40	AC		C
〃	9-41	AC		C
〃	9-42	AC		C
〃	9-43	AC		C
〃	9-44	AC		C
〃	9-45	AC		C
RH-IX2168SCZZ	8-122	BB		B
RH-IX2201SCZZ	8-125	AG	N	B
RH-IX2202SCZZ	8-118	AM	N	B
RH-IX2203SCZZ	8-119	AH	N	B
RHEDZ2063XHZZ	6-14	BQ	N	B
RMOTZ2161XHZZ	5-14	AX	N	B
RR-TZ3017SCZZ	8-225	AC		B
〃	8-226	AC		B
〃	8-227	AC		B
〃	8-230	AC		B
〃	8-231	AC		B
〃	8-232	AC		B
〃	8-233	AC		B
〃	8-235	AC		B
〃	8-236	AC		B
RR-TZ3018SCZZ	8-224	AC		B
〃	8-228	AC		B
〃	8-229	AC		B
〃	8-237	AC		B
RR-TZ3029SCZZ	8-234	AB		B
RRLYD3130SCZZ	8-239	AN		B
RRLYD3433XHZZ	9-30	AH		B
RTRNI2164XHZZ	9-84	AG		B
[S]				
SPAKA213AAXZZ	7-11	AC		D
SPAKA261CXHZZ	7-17	AC	N	D
SPAKA262CXHZZ	7-18	AC	N	D
SPAKA328CXHZZ	7-5	AC	N	D
SPAKC263CXHZZ	7-19	AG	N	D
SPAKC300CXHTZ	7-19	AK	N	D
SPAKP4381AXZZ	7-16	AG		D
[T]				
TCADZ3055XHZZ	7-1	AN	N	D
TINSE4157XHTZ	7-6	AK	N	D
TINSE4162XHTZ	7-6	AL	N	D
TLABH276CXHZZ	7-7	AD	N	D
TLABH4161AXZZ	1-27	AD		D
[U]				
UBATL2049SCZZ	8-1	AF		B
[V]				
VCCCCY1HH101J	8-19	AA		C
〃	8-20	AA		C
〃	8-50	AA		C
〃	8-57	AA		C
〃	8-64	AA		C
〃	8-65	AA		C
〃	8-73	AA		C
〃	8-74	AA		C
〃	8-75	AA		C
〃	8-76	AA		C
VCCCCY1HH150J	8-70	AB		C
〃	8-71	AB		C
〃	8-78	AB		C
VCCCCY1HH180J	8-27	AA		C
VCCCCY1HH221J	8-92	AA		C
〃	8-201	AA		C
〃	8-217	AA		C
〃	9-21	AA		C
〃	9-27	AA		C
VCCCCY1HH330J	8-28	AA		C
〃	9-16	AA		C
〃	9-20	AA		C
VCEAGA0JW227M	8-6	AD		C
〃	8-7	AD		C
VCEAGA1EW476M	8-2	AA		C
〃	8-10	AA		C
VCEAGA1HW106M	8-4	AA		C
〃	8-11	AA		C
〃	8-13	AA		C
〃	8-14	AA		C
〃	9-10	AA		C
VCEAGA1HW107M	8-5	AA		C
〃	8-8	AA		C
〃	8-12	AA		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VCEAGA1HW226M	8-3	AB		C
〃	8-9	AB		C
〃	9-3	AB		C
〃	9-4	AB		C
〃	9-6	AB		C
〃	9-7	AB		C
〃	9-9	AB		C
〃	9-11	AB		C
〃	11-1	AB		C
VCEAGA1HW475M	9-5	AA		C
VCKYCY1AF105Z	8-16	AC		C
〃	8-17	AC		C
〃	8-23	AC		C
〃	8-29	AC		C
〃	8-30	AC		C
〃	8-33	AC		C
〃	8-34	AC		C
〃	8-36	AC		C
〃	8-42	AC		C
〃	8-43	AC		C
〃	8-44	AC		C
〃	8-45	AC		C
〃	8-46	AC		C
〃	8-48	AC		C
〃	8-69	AC		C
〃	8-83	AC		C
〃	8-85	AC		C
〃	8-91	AC		C
〃	8-93	AC		C
〃	8-96	AC		C
〃	9-14	AC		C
〃	9-19	AC		C
VCKYCY1CB104K	8-81	AB		C
〃	8-82	AB		C
〃	8-88	AB		C
〃	9-25	AB		C
VCKYCY1EB393K	9-15	AB		C
VCKYCY1EF104Z	8-15	AA		C
〃	8-32	AA		C
〃	8-35	AA		C
〃	8-41	AA		C
〃	8-58	AA		C
〃	8-72	AA		C
〃	8-77	AA		C
〃	8-87	AA		C
〃	8-94	AA		C
〃	8-95	AA		C
〃	9-12	AA		C
VCKYCY1HB102K	8-21	AA		C
〃	8-22	AA		C
〃	8-24	AA		C
〃	8-25	AA		C
〃	8-37	AA		C
〃	8-38	AA		C
〃	8-39	AA		C
〃	8-49	AA		C
〃	8-53	AA		C
〃	8-54	AA		C
〃	8-55	AA		C
〃	8-56	AA		C
〃	8-97	AA		C
〃	9-24	AA		C
〃	9-28	AA		C
VCKYCY1HB103K	8-67	AA		C
〃	9-26	AA		C
VCKYCY1HB222K	9-22	AA		C
〃	9-29	AA		C
VCKYCY1HB472K	8-68	AA		C
VCKYCY1HB821K	9-18	AA		C
VCKYPU1HF223Z	11-2	AA		C
VCKYTV1CF225Z	8-26	AD		C
〃	8-40	AD		C
〃	8-47	AD		C
〃	8-51	AD		C
〃	8-52	AD		C
〃	8-59	AD		C
〃	8-60	AD		C
〃	8-61	AD		C
〃	8-62	AD		C
〃	8-63	AD		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VCKYTV1HF104Z	8-18	AA		C
〃	8-31	AA		C
〃	8-79	AA		C
〃	9-13	AA		C
〃	9-17	AA		C
〃	9-23	AA		C
VCTYPA1HF104Z	8-98	AC		C
VHDDA204K//-1	9-36	AC		B
VHDDSS133//-1	9-34	AA		B
〃	9-35	AA		B
VHDHRW0202B-1	8-111	AD		B
VHD1SS355//-1	8-109	AB		B
〃	8-110	AB		B
〃	8-112	AB		B
〃	8-113	AB		B
〃	8-114	AB		B
〃	8-115	AB		B
VHEHZ2C1///-1	9-87	AA		B
〃	9-88	AA		B
VHEHZ27-1//-1	9-89	AB		B
VHEMTZJ5R1B-1	9-90	AB	N	B
VHE1N4748A/-1	8-108	AC		B
VHINJM2113M-1	8-128	AG		B
VHINJM2904M-2	9-37	AG		B
〃	9-38	AG		B
VHINJM318M/-F	8-126	AF		B
VHISCE114//-1	8-124	BG		B
〃	8-127	BG		B
VHITCD1208AP1	11-4	AX		B
VHITD62001AP1	8-117	AE		B
VHIW24258S7LE	8-123	AQ		B
VHI27020FPS0B	8-121	BN	N	B
VHI62FP332P-1	8-238	AF		B
VHPSG206S//-1	8-135	AG		B
〃	8-136	AG		B
VHPSNK15A24-1	4-14	AZ		B
VHPTLP521-1BL	9-46	AE		B
VHVERZV5D471/	9-85	AC		B
〃	9-86	AC		B
VHVRA391PV6-1	9-1	AE		B
VRD-HT2HY223J	9-50	AA		C
VRD-RC2EY222J	11-6	AA		C
VRD-RC2EY390J	11-7	AA		C
VRS-CY1JB000J	8-66	AA		C
〃	8-80	AA		C
〃	8-84	AA		C
〃	8-86	AA		C
〃	8-89	AA		C
〃	8-90	AA		C
〃	8-129	AA		C
〃	8-130	AA		C
〃	8-131	AA		C
〃	8-133	AA		C
〃	8-134	AA		C
〃	8-145	AA		C
〃	8-151	AA		C
〃	8-152	AA		C
〃	8-153	AA		C
〃	8-155	AA		C
〃	8-156	AA		C
〃	8-158	AA		C
〃	8-163	AA		C
〃	8-168	AA		C
〃	8-182	AA		C
〃	8-184	AA		C
〃	8-196	AA		C
〃	8-197	AA		C
〃	8-202	AA		C
〃	8-203	AA		C
〃	8-207	AA		C
〃	8-210	AA		C
〃	8-215	AA		C
〃	8-216	AA		C
〃	8-218	AA		C
〃	8-220	AA		C
〃	9-65	AA		C
〃	9-73	AA		C
〃	9-77	AA		C
〃	9-80	AA		C
〃	9-81	AA		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VRS-CY1JB101J	8-181	AA		C
〃	9-61	AA		C
VRS-CY1JB102J	8-174	AA		C
〃	8-185	AA		C
〃	8-191	AA		C
〃	8-208	AA		C
〃	9-63	AA		C
〃	9-69	AA		C
〃	9-74	AA		C
VRS-CY1JB103J	8-144	AA		C
〃	8-157	AA		C
〃	8-162	AA		C
〃	8-170	AA		C
〃	8-221	AA		C
〃	8-222	AA		C
〃	8-223	AA		C
〃	9-75	AA		C
VRS-CY1JB104J	8-183	AA		C
〃	8-200	AA		C
〃	8-204	AA		C
VRS-CY1JB105J	8-188	AA		C
VRS-CY1JB106J	8-149	AA		C
VRS-CY1JB113J	8-199	AA		C
VRS-CY1JB151J	9-68	AA		C
VRS-CY1JB152J	9-70	AA		C
VRS-CY1JB153J	9-56	AA		C
VRS-CY1JB203J	8-176	AA		C
〃	8-186	AA		C
〃	9-55	AA		C
〃	9-62	AA		C
〃	9-78	AA		C
〃	9-79	AA		C
VRS-CY1JB221J	8-187	AA		C
VRS-CY1JB222J	8-209	AA		C
VRS-CY1JB223J	8-150	AA		C
〃	8-169	AA		C
VRS-CY1JB224J	8-160	AA		C
〃	8-219	AA		C
〃	9-67	AA		C
VRS-CY1JB271J	8-142	AA		C
〃	8-147	AA		C
〃	8-148	AA		C
〃	8-159	AA		C
〃	8-161	AA		C
〃	8-164	AA		C
〃	8-165	AA		C
〃	8-166	AA		C
〃	8-167	AA		C
〃	8-171	AA		C
〃	8-172	AA		C
〃	8-173	AA		C
〃	8-177	AA		C
〃	8-178	AA		C
〃	8-189	AA		C
〃	8-190	AA		C
〃	8-211	AA		C
〃	8-212	AA		C
〃	8-214	AA		C
VRS-CY1JB301J	9-57	AA		C
VRS-CY1JB302J	8-205	AA		C
VRS-CY1JB332J	9-53	AA		C
〃	9-66	AA		C
〃	9-76	AA		C
VRS-CY1JB333J	8-192	AA		C
VRS-CY1JB393J	8-195	AA		C
〃	9-72	AA		C
VRS-CY1JB433J	8-206	AA		C
VRS-CY1JB471J	8-175	AA		C
〃	8-179	AA		C
〃	8-180	AA		C
VRS-CY1JB472J	8-194	AA		C
〃	8-198	AA		C
〃	9-60	AA		C
VRS-CY1JB473J	9-58	AA		C
VRS-CY1JB474J	8-143	AA		C
VRS-CY1JB513J	8-154	AA		C
VRS-CY1JB562J	8-146	AA		C
VRS-CY1JB621J	9-59	AA		C
VRS-CY1JB822J	9-71	AA		C
VRS-RE3AA102J	8-141	AA		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VRS-TS2AD000J	8-132	AA		C
〃	8-213	AA		C
VRS-TS2AD101J	9-52	AA		C
VRS-TS2AD102J	9-51	AA		C
VRS-TS2AD223J	9-54	AA		C
VRSTS2AD8662F	9-64	AA		C
VSDTC143ZK/-1	8-137	AD		B
〃	8-138	AD		B
〃	9-47	AD		B
〃	9-48	AD		B
VSRNC1402//-1	8-139	AC		B
〃	8-140	AC		B
VS2SC1815GR-1	11-5	AB		B
VS2SC2412KR-1	9-49	AD		B
[X]				
XBBSD30P06000	6-B6	AA		C
XBPSD30P06K00	1-B4	AA		C
XBPSN40P06K00	1-B5	AA		C
XEBSD20P06000	2-B1	AA		C
XEBSD30P10000	1-B2	AA		C
〃	5-B2	AA		C
〃	6-B2	AA		C
XEBSE30P10000	1-B10	AA		C
XEBSF30P12000	1-B11	AA		C
[0]				
0CBBFZ89256Z/	10-26	AD		B
0CBLRZ6708ZQ/	10-29	AQ	N	C
0CBLRZ6709ZQ/	10-30	AQ	N	C
0CBPJCSX2501/	10-24	AH		A
0CBPKZ1219ZZ/	10-17	AD		C
0CBPKZ1251ZZ/	10-18	AH	N	C
0CBPZZ0906ZZ/	10-25	AH		A
0CBUAC0034EL/	10-35	AD	N	B
0CBUAC0255AM/	10-33	AD	N	B
0CBUAC0264AK/	10-34	AD	N	B
0CBUAG0161EZ/	10-32	AQ		B
0CBUBB0248EZ/	10-23	AD	N	B
0CBUBC0169CL/	10-22	AE	N	B
0CBUBC0304AZ/	10-21	AE		B
0CBUBC0336AZ/	10-20	AL		B
0CBUBDBM300D/	10-57	AC		B
0CBUBXAD4R3C/	10-56	AD		B
0CBUBXAD6R2C/	10-58	AD		B
0CBUBY0020AK/	10-19	AD		B
0CBUCB0111AZ/	10-27	AM		B
0CBUDC0062MZ/	10-31	AG		B
0CBUEEB474DJ/	10-37	AC	N	C
〃	10-38	AC	N	C
0CBUEEC225CF/	10-36	AC	N	C
0CBUEFDR15DB/	10-45	AE		C
0CBUEFE104DH/	10-52	AD		C
0CBUEXCAA000/	10-6	AB		C
0CBUEXCAA102/	10-47	AC	N	C
0CBUEXCAA181/	10-42	AC	N	C
0CBUEXCAA334/	10-48	AC	N	C
0CBUEXCAA471/	10-44	AC	N	C
0CBUEXCAA472/	10-46	AC	N	C
0CBUEXCAA473/	10-41	AC	N	C
〃	10-43	AC	N	C
0CBUEXCAA682/	10-40	AC	N	C
0CBUEXDAA332/	10-51	AC	N	C
0CBUEXDAA561/	10-39	AC	N	C
0CBUEYAA2202/	10-49	AC	N	C
0CBUEYAA8201/	10-50	AC	N	C
0CBUEZ0666ZZ/	10-54	AD	N	B
0CBUFBA102EE/	10-55	AD		B
0CBUGAC331TR/	10-8	AF		C
0CBUGAE331TS/	10-7	AH		C
0CBUGAL151SM/	10-2	AL		C
0CBUGCD104DT/	10-11	AD	N	C
0CBUGCM332BJ/	10-16	AF		C
0CBUGCS152JG/	10-10	AD	N	C
0CBUGCU472BW/	10-13	AD	N	C
0CBUGCU681EL/	10-3	AD	N	C
0CBUGFF472EH/	10-5	AD		C
0CBUGXGCF102/	10-12	AD	N	C
0CBUGXGCF104/	10-9	AD	N	C
0CBUGXGCF152/	10-4	AF	N	C
0CBUGXGDF271/	10-14	AD	N	C
0CBUGZ1274ZZ/	10-1	AD	N	C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
0CBUGZ1274ZZ/	10-15	AD	N	C
0CBUKZ0790ZZ/	10-28	AK		C
0CB829655033/	10-53	BE	N	B

SHARP

SHARP CORPORATION
Communication Systems Group
Quality & Reliability Control Center
Higashihiroshima, Hiroshima 739-0192, Japan
Printed in Japan

A0010-1823DS•IS•T